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PREPARATORY COMMITTEE FOR THE UNITED
NATIONS CONFERENCE ON ENVIRONMENT
AND DEVELOPMENT
Fourth session
New York, 2 March-3 April 1992
Item 2 (b) of the provisional agenda*

PREPARATIONS FOR THE UNITED NATIONS CONFERENCE ON ENVIRONMENT AND DEVELOPMENT ON THE BASIS OF GENERAL ASSEMBLY RESOLUTION 44/228 AND TAKING INTO ACCOUNT OTHER RELEVANT GENERAL ASSEMBLY RESOLUTIONS: RELEVANT ACTIONS OF INTERGOVERNMENTAL AND OTHER BODIES OF RELEVANCE TO THE PREPARATORY PROCESS

Letter dated 19 February 1992 from the representatives of Bolivia, Brazil, Colombia, Ecuador, Guyana, Peru, Suriname and Venezuela to the United Nations addressed to the Secretary-General

We have the honour to forward you the declaration adopted by the Presidents of the Amazonian States in their second meeting, held in Manaus, Brazil, on 10 and 11 February 1992 (see annex).

We request that this declaration be circulated as an official document of the fourth session of the Preparatory Committee for the United Nations Conference on Environment and Development.

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* A/CONF.151/PC/96.

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ANNEX

Declaration of the Second Meeting of Presidents of the Amazonian States

The Presidents of the Amazonian States, having met in Manaus on 10 and 11 February 1992, with the purpose of examining the issues that will be considered by the United Nations Conference on Environment and Development, hereby adopted the following:

MANAUS DECLARATION ON THE UNITED NATIONS CONFERENCE ON ENVIRONMENT AND DEVELOPMENT

1. We are convinced that an environmentally sound planet should correspond to a socially and economically just world. In order to achieve this objective, it is essential to transform behaviour and development models and non-sustainable patterns of consumption.

2. In our countries, the imperative of economic and social development should be related to environmental conservation and protection, through the promotion of strategies for the sustainable use of natural resources and respect for the right of citizens to a better quality of life. We affirm therefore the right of our countries to use their own resources to ensure their well-being and progress.

3. We reaffirm the importance of education and public awareness; therefore, we pledge to fully support efforts aimed at increasing public knowledge and commitment to sound environmental practices. We further commit ourselves to the strengthening of environmental education and call on the international community to support this action.

4. We reaffirm our conviction that international production, consumption, and distribution patterns are at the origin of the environmental problems being faced by developing countries, particularly the deterioration of the ecosystems, and the poverty to which most human beings have been condemned.

5. The greater responsibility of developed countries for the progressive deterioration of the environment is recognized, which is a further reason why they cannot intend to impose ecological controls and conditionalities on developing countries.

6. Underdevelopment in its turn is both a fundamental cause and a serious effect of environmental deterioration. The solution of environmental problems is thus intimately connected to a new attitude towards international cooperation in terms of expansion of financial resources, increased access to technologies, expanded commercial flows, and measures aimed at solving the problem of the foreign debt.

7. Urgent internal actions aimed at eliminating poverty will not be sufficient if they are not supported by international cooperation based on new principles.

8. Furthermore, in order to overcome the present environmental problems, conscious and determined efforts are required on the part of States and individuals which should transcend the mere logic of market forces.

9. Since the signing of the Treaty for Amazonian Cooperation on 3 July 1978, our countries accepted a profound and broad commitment to undertake actions aimed at attaining harmonious development in the region, whose features are clearly conceived and defined in the Treaty. This unique commitment enabled our countries to be provided now with a wide scope of policies and strategies through which it will be possible to attain sustainable development goals in this region.

10. We recognize the rights of indigenous populations and their contribution to conservation of the environment. We believe that a greater participation of these populations in this effort will be positive. With this aim, we are adopting significant measures, among which special mention must be made of the effort undertaken to respect the rights of indigenous populations in relation to their lands, according to national laws. Therefore, consistently with the mandate received from the first Ibero-American Summit, held in Guadalajara, we have assessed the progress that has been achieved and we reaffirm our support for the establishment of the Fund for the Development of Indigenous Populations in Latin America and the Caribbean.

11. We are intent on continuing to promote our efforts aimed at the conservation of the largest native forest in the planet and its sustainable development, dedicating the resources within our reach to these purposes.

12. In this connection, we reaffirm the principles and objectives of the Manaus Declaration, of 6 May 1989, in which our countries have established our common interests in the Amazonian region, particularly with regard to the future cooperation towards the development and conservation of this patrimony.

13. We also reaffirm that this committment will not be sufficient without an international cooperation in support of the efforts undertaken by our States in the discharge of their responsibilities and in the exercise of their sovereignty.

14. We reaffirm our disposition of strengthening bilateral and subregional cooperation, in order to prevent environmental damage and to manage their consequences.

15. The United Nations Conference on Environment and Development will be the historical opportunity for beginning new global relations translated into financial and technological cooperation programmes, making it possible for developing countries to deepen the efforts they have been undertaking to

conserve and stimulate the sustainable development of their natural resources. This is why we are intent on contributing to ensure its success together with the remaining Latin American and Caribbean countries, with which we have adopted, in March 1991, the Platform of Tlatelolco on Environment and Development.

16. We have agreed upon a joint understanding on the main issues before the Conference. We believe that this understanding will meet the expectations of the whole international community. This joint understanding is contained in the following position document to guide the delegations of our countries in the negotiations leading to the Conference.

JOINT POSITION DOCUMENT OF THE AMAZONIAN STATES FOR THE UNITED NATIONS CONFERENCE ON ENVIRONMENT AND DEVELOPMENT

I. Climate change

1. Present trends of global climate change will bring profound implications to the environmental and economic development of our countries, including islands and low-lying coastal areas. We urge the developed countries, mainly responsible for the cumulative concentration of greenhouse gases, to adopt concrete measures to reverse those trends.

2. Negotiations centring on a framework convention on climate change constitute a unique opportunity for the international community to reach commitments to reverse the trend towards an increase in concentration of all greenhouse gases. Those commitments are necessarily differentiated with regard to developed and developing countries and should not affect the economic and commercial interests of the latter. Developing countries will only be able to join the international efforts towards climate protection if they are assured of the necessary financial and technological resources for the adoption of a new sustainable development model.

3. It is necessary that each country adopt the energy model best suited to its own as well as to global needs. Required adaptations lead to the substitution of lifestyles and consumption patterns that are unsustainable with regard to future generations.

II. Biological diversity and biotechnology

1. Biological resources are unmistakably natural resources of each country, which therefore enjoy national sovereignty over them. Immediate action is necessary to promote the conservation and sustainable use of biological diversity. Consequently, countries should implement these activities, with the support of international cooperation, on the basis of intergovernmental agreements.

2. The recognition of the rights of countries of origin of biological diversity, including mainly of genetic resources, is fundamental. The adoption of, and compliance with, adequate registration, regulation, and control systems is absolutely necessary.

3. Cooperation between developed countries and countries which are rich in biodiversity is necessary, particularly with the aim of strengthening local research and institutional capacity.

4. Greater emphasis should be placed on the use and sustainable development of these resources than on their mere conservation, so as to maximize and disseminate their benefits.

5. Conservation of biological diversity should have an integrated character, preferably carried out in protected areas, and areas defined by ecological and economic zoning. In this regard, regional cooperation is important. The ecological and economic zoning programme conceived and developed within the scope of the Treaty for Amazonian Cooperation is a worthy example in this respect.

6. In situ and ex situ research in countries of origin should be particularly supported and encouraged. International cooperation aimed at maintaining genetic banks is necessary.

7. Biological diversity and biotechnology have a close relationship, constituting one of the clearest opportunities for sustainable development. Biotechnology depends in great measure on the conservation of genetic and biological resources, particularly in developing countries which are rich in biological diversity.

8. It is necessary to enhance and protect the traditional methods and the knowledge of indigenous populations and local communities. Their participation in the economic and commercial benefits derived from the use of biological diversity is necessary, so as to ensure their economic and social development opportunities.

9. Our interest in the success of the negotiations on a convention on biological diversity is clear. This convention should reflect the necessary relationship between access to the resources of biological diversity and particularly access to the biotechnology originating from it, as well as to the technology necessary for its conservation.

10. Access to the resources of biological diversity should necessarily include those resulting from biotechnology, as well as native and cultivated resources. International cooperation is needed to promote the endogenous development of research on biotechnology in countries of origin of the biological resources.

III. Forests

1. The international debate on forests should take into account that these ecosystems are part of territories inside State jurisdiction, where these States fully exercise their sovereignty. It is up to States to legislate over these areas according to national priorities.

2. Any global consideration on forest resources must necessarily include all types of forests and must not discriminate against any region.

3. It is fundamental to recognize the importance of forests as an economic, cultural and social space, besides being an environmentally important one. The interaction between these elements constitute an indivisible unity, very ample and complex. Forest policies constitute an important development strategy in our countries.

4. The economic dimension of forests encompasses the natural forest patrimony. It includes mineral reserves, energy sources, tourist potential and possibilities of human occupation for productive activities. Their social and cultural dimensions consist in their function as habitat of human populations, native or not, which depend on the forest for their survival and cultural development.

5. National efforts aimed at developing a sustainable use of forests must be supported by the international community.

6. Emphasis should be given to enhance the economic use of the native forest for its positive environmental, social and economic effects. Nevertheless, timely and sufficient market access for the different forestry products is indispensable.

7. Forest management should reconcile the imperative of its economic enhancement for the benefit of national societies, so as to secure dignified living conditions to those dependent on them for their livelihood, with adequate environmental protection. Developing countries present in this respect specific needs which should be considered in the decisions taken by the United Nations Conference on Environment and Development.

8. The economic activities taking place in forests can be made compatible with conservation and protection of the environment and natural resources. To this end, countries should develop sustainable forest utilization strategies and have access to markets for their products in order to make their sustainable development possible.

9. These strategies should seek compatibility between short-term actions and long-term perspectives, reflecting future opportunities. The cost-benefit approach should enhance social equity, improved technological efficiency of the production processes, conservation of natural resources, respect for cultural values of local communities as well as for their knowledge of traditional forest uses.

IV. Soil degradation

1. It is increasingly important to reverse the growing trend towards soil degradation, such as erosion and desertification, and the prevention of those problems. Unsustainable agricultural production processes, inadequate use of technologies and disorganized land occupation have been producing serious environmental impacts resulting in damage to agricultural production that undermine the food security of developing countries.

2. Combat of drought, river basin conservation, protection of forest cover, integrated use of soil and freshwater resources are fundamental.

3. It is necessary to promote the occupation of land according to its environmental configuration and its development potential, both dynamically conditioned by scientific and technological breakthrough. The importance of preventive and corrective actions in protected areas is noteworthy. It is essential, however, that these measures be also implemented in agricultural areas.

V. Freshwater resources

1. The environmentally sound management of freshwater resources is a fundamental element of ecosystems conservation as well as the protection of human health and the promotion of well-being.

2. The close interaction between integrated management of freshwater resources and the protection of marine and terrestrial ecosystems, biological diversity and rational land use should be recognized. Sustainable development programmes for freshwater resources should be identified at local, national, regional and global levels, as well as the effective means for their implementation.

3. In this regard, the measures taken at national and regional levels for the integrated management of river basins are important. These measures are essential for the correct use of freshwater as a source of productive activities, such as irrigation, fishing, production of energy and transportation, as well as for controlling polluting agents, adopting measures to prevent and control environmental risks, and protecting the health of the populations.

4. The quality of life of populations is closely linked to the supply of potable water in quantities and quality corresponding to their needs. In this respect, States should establish precise goals for their supply requirements in the next decade following a well-defined time-frame.

5. Institutional capacity-building, public awareness, education, and availability of funds are necessary elements for an integrated management of freshwater resources. National efforts towards an integrated management of river basins should be recognized by the international community and receive its cooperation.

VI. Hazardous and toxic wastes

1. Hazardous and toxic waste should be disposed of or eliminated at its production site. Destination countries should have adequate technology for an environmentally sound management of such wastes.

2. In order to deal adequately with the problem, the negotiation of a protocol to the Basel Convention should be concluded as soon as possible, establishing appropriate procedures regarding liability and indemnization of damages resulting from transboundary movement and management of hazardous wastes.

3. It is also necessary to analyse, in light of the Basel Convention, the existing norms, regulations and practices regarding dumping of hazardous wastes in the sea so as to recommend any additional measure within the scope of the Convention on the Prevention of Marine Pollution by Dumping of Wastes and other Matter (London, 29 December 1972).

4. Moreover, it is indispensable that the international community should implement the mechanism established by resolution 44/226 of the United Nations General Assembly with regard to the illicit traffic of toxic products and waste, which are destined to monitor and to denounce such traffic.

VII. Institutional strengthening

1. Institutional strengthening, as a requirement for promoting sustainable development, should be guided by the objective of enhancing the combination of decisions of an economic nature with environmental protection strategies. Overcoming the institutional dichotomy between these two fields is a goal to be attained both by the States, domestically, and by international organizations. This should be one of the main elements of innovation in dealing with issues related to environment and development.

2. Priority should be given to strengthening national institutions in order to promote sustainable development. Likewise, we emphasize the importance of strengthening regional institutions. International cooperation represents a clear basis for the conservation and rational use of the natural patrimony.

3. On a global level, creative formulae must be sought in order to provide the United Nations with stronger and more efficient mechanisms to adopt the decisions of the United Nations Conference on Environment and Development. The planning and implementation of their actions must be defined with the full participation of developing countries, so as to meet their priorities. In this connection, these institutions should be capable of supporting, according to the specific needs of each country, measures and programmes implemented by them with a view of achieving sustainable development.

VIII. Human settlements

1. The problems affecting urban life have also a global dimension inasmuch as their consequences transcend national frontiers. Over the last 20 years,

industrialized countries have accomplished evident improvements of the living standards in their cities with large sums of money and new technologies. In the developing countries, on the contrary, the situation of urban agglomerations is reaching critical levels with serious unforeseeable consequences. It is up to the United Nations Conference on Environment and Development to adopt, within the scope of Agenda 21, a programme of concrete actions to modify this situation in developing countries.

2. The programme of Agenda 21 referring to human settlements should include access to basic services such as sanitation, housing, drinking water, security, energy supply and transportation. In this context, both urban slums and rural settlements should equally deserve attention, as well as shelter provision for the "no-income" groups of population and the critically poor.

3. It is necessary to develop the means for education, public awareness as well as training aimed at the adequate treatment of problems such as violence, homeless children, disposal and management of domestic and industrial wastes, unemployment, disorganized and unplanned occupation of land and lack of basic sanitation.

4. The implementation of necessary initiatives in developing countries requires additional resources from international cooperation.

IX. Indigenous and local populations and communities

1. In the context of the improvement of the quality of life of indigenous and local populations and communities, it is necessary to recognize the value of their traditional knowledge and practices for the promotion of sustainable development. Mechanisms to protect traditional knowledge and for compensation of appropriation and commercial use of their knowledge should be created. Therefore, it is necessary to guarantee conditions for their self-development, to support the development of their own environmentally sustainable alternative means of production and to strengthen national institutional mechanisms, so as to promote their development and protect and guarantee their habitat.

2. It is equally important to guarantee respect for the rights of the indigenous population and local communities so as to preserve their cultural identity. National efforts for the promotion of sustainable development of these communities are fundamental, supported by increased international technical and financial cooperation, particularly within the context of the International Year of Indigenous People to be celebrated in 1993.

X. Financial resources

1. The attainment of the objective of integrating environment and development requires a new international cooperation spirit. This new spirit is based on the understanding that developed countries and developing countries are partners in the same cause and that the economic and environmental benefits derived from this cooperation will be common.

2. In their efforts to attain this common objective, however, the countries have available to them extremely unequal financial means and capabilities. Consequently, developing countries face many limitations in participating in the global efforts.

3. The industrialized countries have a historical responsibility for the presently unsustainable situation of the environment on a global scale. For this reason, and because of their economic and financial capacity, they should assume a proportionately greater responsibility in the sustainable development process.

4. In this connection, new and additional financial flows must be assured to developing countries under adequate conditions, so that they may fulfil the obligation to protect the environment and promote development.

5. A solution must be found for the serious issue of the foreign debt of developing countries, because it undermines their capability to adopt vital policies and measures to implement sustainable development strategies.

6. Likewise, protectionist barriers imposed on international trade must be eliminated, whether being traditional or environmentally conceived non-tariff barriers. On the other hand, it will be necessary to value natural products and to price them according to their value.

7. The new financial resources should be channelled through appropriate institutional mechanisms, on a concessional basis, without conditionalities, operating in accordance with the priorities of the recipient, and treating in a harmonious way issues related to the environment and development. Such resources, moreover, should meet the needs of the populations of developing countries in terms of an environmentally sound socio-economic development.

8. The representation in these mechanisms and their management should comply with the criterion of equity between developed and developing countries. For all of these reasons, it should be understood that the financial mechanism called "Global environmental facility" is a clearly limited and insufficient instrument. It is essential to conceive mechanisms to make it possible for the countries to implement the guidelines and action programmes of Agenda 21, and thus promote sustainable development. Likewise, the multilateral legal instruments being negotiated should include financial mechanisms of their own, with the above-mentioned features.

XI. Transfer of technology

1. Effective consolidation of new mechanisms of transfer of technology is necessary to ensure environmentally appropriate technologies to developing countries. Due to financial and institutional limitations of developing countries, access to these technologies should be on a preferential rather than on a purely commercial basis, considering the main responsibility of developed countries for the environmental deterioration as well as the common interest of the international community in the protection of the global

environment. Transfer of new environmentally sound technologies to developing countries is a condition for the fulfilment of environmental and development commitments to be made during the United Nations Conference for Environment and Development, as well as in the conventions on biological diversity and climate change now under negotiation.

2. It is also important to increase national and regional capabilities not only to absorb environmentally sound technologies, but also to carry out scientific research and develop technologies of their own. Developed countries should support such efforts on a bilateral and multilateral basis.

Manaus, 10 February 1992

Signed by the Presidents of:

Bolivia
Brazil
Colombia
Ecuador
Guyana
Peru
Suriname
Venezuela

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PREPARATORY COMMITTEE FOR THE UNITED
NATIONS CONFERENCE ON ENVIRONMENT
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Fourth session
New York, 2 March-3 April 1992
Working Group II
Item 2 of the provisional agenda*

PROTECTION OF THE OCEANS AND ALL KINDS OF SEAS, INCLUDING ENCLOSED AND SEMI-ENCLOSED SEAS, AND COASTAL AREAS AND THE PROTECTION, RATIONAL USE AND DEVELOPMENT OF THEIR LIVING RESOURCES

Global aspects of marine pollution

CONVENTION ON THE PREVENTION OF MARINE POLLUTION BY DUMPING OF WASTES AND OTHER MATTER

Note by the Secretary-General of the Conference

1. In its decision 1/20, paragraph 2, the Preparatory Committee for the United Nations Conference on Environment and Development invited the International Maritime Organization (IMO) "to consider initiating work to strengthen the regime curbing dumping at sea".

2. In response, IMO prepared a report (A/CONF.151/PC/31), which was considered by the Preparatory Committee at its second session. The Fourteenth Consultative Meeting of the Contracting Parties (London, 25-29 November 1991) adopted further resolutions on this subject which it requested be forwarded to the Preparatory Committee. IMO has therefore prepared the following material for the consideration of the Preparatory Committee at its fourth session (see annex).

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* See A/CONF.151/PC/96.

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ANNEX

Outcome of the Fourteenth Consultative Meeting
of Contracting Parties, London, 25-29 November 1991

1 INTRODUCTION

1.1 The International Maritime Organization (IMO) in response to PrepCom decision 1/20, paragraph 2, submitted a report to the second session of the Committee reflecting the accomplishments and achievements made within the framework of the London Dumping Convention, including resolution LDC.40(13) adopted by the Thirteenth Consultative Meeting of Contracting Parties to the London Dumping Convention (A/CONF.151/PC/31). For easy reference, the text of resolution LDC.40(13) has been reproduced in annex 1 to this document.

1.2 The Fourteenth Consultative Meeting of Contracting Parties convened from 25 to 29 November 1991, requested IMO to forward additional comments to the UNCED Preparatory Committee, together with details of relevant decisions and actions taken at that Meeting.

1.3 A text adopted by the Fourteenth Consultative Meeting for submission to the fourth session of the Preparatory Committee is set out in section 2. Section 3 and 4 contain other relevant decisions and actions taken by the Consultative Meeting.

2 FURTHER ACTION TO RESOLUTION LDC.40(13)

2.1 At the Thirteenth Consultative Meeting of the London Dumping Convention the Contracting Parties adopted resolution LDC.40(13) concerning the Protection of the Oceans and all Kinds of Seas, including Enclosed and Semi-enclosed Seas, and Coastal Areas. That resolution was submitted to the Second Session of the Preparatory Committee (PrepCom II) of UNCED (A/CONF.151/PC/31). The Fourteenth Meeting of Contracting Parties to the London Dumping Convention, London, 25-29 November 1991, invites the attention of UNCED to resolution LDC.40(13) in regard to Agenda 21 and offers the following information and comments on UNCED documents A/CONF.151/PC/WG.II/L.18 and L.19/Add.2.

Resolution LDC.40(13)

2.2 The Consultative Meeting welcomes the fact that international co-operation and co-ordination to protect the marine environment from pollution from all sources is being addressed in section E of A/CONF.151/PC/WG.II/L.18. It is encouraged that UNCED is considering proposals at the highest intergovernmental level on ocean matters. The Contracting Parties believe that the London Dumping Convention can provide a special contribution to this effort and will similarly benefit from the strengthened co-ordination envisioned by those proposals. For example, by resolution LDC.46(14), the Contracting Parties call upon relevant regional organizations and the Consultative Meeting to co-ordinate and encourage the harmonization of policies and to mutually support and participate in activities to promote the prevention of pollution in the marine environment. Resolution LDC.46(14) is shown in annex 2.

2.3 Whereas the London Dumping Convention provides the appropriate global framework to limit and control the dumping of wastes at sea, the Meeting notes with appreciation the proposals contained in document L.18, on prevention, reduction and control of land-based sources of marine pollution, including the proposal for a new global framework on land-based sources of marine pollution, and encourages UNCED activities in this regard.

2.4 Concerning the precautionary approach in addressing waste management problems in the context of ocean dumping, the attention of the Preparatory Committee of UNCED is drawn to the Fourteenth Consultative Meeting's resolution LDC.44(14) on the application of a precautionary approach in environmental protection within the framework of the Convention, as shown in annex 3.

2.5 The Contracting Parties note with satisfaction that Agenda 21 urges States to ratify or accede to the Convention as soon as possible or to inform the Secretariat of any specific problems that they may have and assistance they may require in implementing the provisions of the Convention. Regarding the recommendation to strengthen mechanisms for

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providing co-operation, transfer of technology and assistance that would improve the capacity of developing countries to implement the measures addressed above, the Contracting Parties, at their next meeting, will address the implementation of any such mechanisms approved by UNCED.

Additional Items

2.6 The Fourteenth Consultative Meeting offers the following additional information and comments on Agenda 21 proposals on ocean dumping:

.1 The Consultative Meeting notes with interest the call to develop an international regulatory global framework for offshore oil discharges, safety and disposal activities by 1995. There is substantial expertise on marine pollution impact matters within the London Dumping Convention which can be brought to bear on those efforts.

.2 The Contracting Parties note the proposals to construct appropriate sewage treatment facilities, but stress that longer term environmentally sound solutions are needed, with a view to ultimately alleviate the need for sewage sludge disposal at sea.

.3 An issue of continuing concern to the London Dumping Convention is the quality of contaminated spoils from dredging of basins and navigation channels for disposal at sea. There is a direct relationship between measures to reduce the anthropogenic inputs of hazardous substances to surface waters, and the improvement of the quality of dredged material for disposal, resulting in better protection of the marine environment as well as the potential for significant cost savings in managing dredged material. Such measures may include waste audits and future guidelines for the implementation of new assessment procedures which are being developed within the framework of the London Dumping Convention.

.4 The transboundary movement of hazardous wastes for the purpose of ocean dumping was recently addressed in resolution LDC.42(13) which calls upon Contracting Parties to prohibit or not to permit the export of wastes for dumping at sea to States not Party to the Convention.

.5 The Consultative Meeting of Contracting Parties to the London Dumping Convention addressed the dumping of industrial wastes at sea in its resolution LDC.43(13) by which Contracting Parties agree to cease such dumping by the end of 1995.

.6 Resolution LDC.39(13) addresses incineration of noxious liquid wastes at sea. The Contracting Parties agreed to re-evaluate that practice with a view toward its termination. It is noted that in early 1991 the sole remaining incineration ship ceased operation.

.7 The Contracting Parties are conducting a Global Waste Survey to determine any technical and social difficulties in the adoption of alternative methods of industrial waste management, including waste avoidance, reduction, treatment and disposal options. The results of the survey will benefit both Contracting Parties to the London Dumping Convention and countries not Party to it. With respect to the phasing out of dumping of industrial wastes, the Contracting

Parties have already committed themselves by resolution LDC. 43(13) to facilitate access to, and transfer of, environmentally sound technologies, particularly to developing countries.

.8 With regard to responsibility for damage to the environment caused by dumping of wastes and liability and compensation for such damages, Article X of the Convention requires Contracting Parties to undertake to develop procedures for the assessment of liability and work is ongoing within the Convention.

.9 Annex I to the London Dumping Convention prohibits the sea disposal of high level radioactive waste. Other Annexes regulate the sea disposal of low level radioactive waste. Several resolutions on this matter have been adopted by the Consultative Meeting to suspend sea disposal of radioactive waste: by resolutions LDC.14(7) and LDC.21(9) Contracting Parties agreed to suspend the disposal at sea of low level radioactive wastes; by resolution LDC.41(13) it included the disposal of radioactive wastes into sub-seabed repositories accessed from the sea. These decisions will be reviewed in 1993 after the completion by its Inter-governmental Panel of Experts on Radioactive Waste Disposal at Sea (IGPRAD) of additional scientific and technical studies and assessments and studies on the political, legal, economic and social aspects of radioactive waste dumping. Consistent with those resolutions, since 1982 no permit has been granted for the disposal at sea of low-level radioactive waste.

3 GLOBAL SEWAGE MANAGEMENT SURVEY

3.1 The Fourteenth Consultative Meeting considered a recommendation of its Scientific Group regarding the need for a global sewage management survey to be carried out by either the Scientific Group or, even more appropriately, by another relevant United Nations Organization. The elements of such a survey should include the following:

- existing and future trends in the collection and treatment of sewage;
- the use of municipal waste water collection and treatment systems for combined or separate management of effluent from domestic (including urban run-off) and industrial sources;
- the availability of pretreatment programmes and techniques for reduction of toxic compounds from industrial discharges prior to discharge into municipal collection systems;
- consideration of disposal requirements for liquid and solid phases arising from sludge production and disposal, such as treated effluent as well as dewatering and incineration residues;
- the availability and sustainability of productive uses of sewage sludge such as land-spreading, composting, etc.;
- the implications of population density, land-use, variation in climate and socio-economic factors for the selection of sewage management technologies at local levels;

- the relative environmental implications of land-based and sea-based disposal methods taking into account the relative contributions to nutrient fluxes and the carbon cycle;

- the full economic implications of alternatives including capital investment, energy use/generation, transport, personnel, space/resource utilization and management, including monitoring costs;

- the composition and characteristics (e.g. toxic substances, pathogens) of sewage sludge as they relate to the availability of certain disposal techniques, such as land spreading; and

- the nature, environmental and human health implications of contaminants of non-domestic origin contained in sewage.

3.2 The Consultative Meeting agreed that the survey was necessary and it noted that WHO, UNEP, HABITAT and FAO have shown interest in carrying out or in co-operating in the survey. The Meeting further agreed that recommendations from UNCED on this matter should be taken into account, as well as the need for regional considerations.

3.3 The Meeting requested its Secretariat to continue contacts with other United Nations agencies and regional bodies on this matter; the Scientific Group was requested to advise the Fifteenth Consultative Meeting on how the survey could be carried out, taking into account comments from other relevant organizations.

4 DISPOSAL AT SEA OF RADIOACTIVE WASTES AND OTHER RADIOACTIVE MATTER

4.1 The Fourteenth Consultative Meeting was informed that, at the third session of the Preparatory Committee for the United Nations Conference on Environment and Development (UNCED) (Geneva, August/September 1991), a draft decision on environmentally sound management of radioactive wastes had been prepared by the UNCED Bureau for consideration by the UNCED Working Group II (A/CONF.151/PC/WG.II/L.19/Add.2). A final decision on this issue would be made at the fourth session of the Preparatory Committee (March/April 1992).

4.2 The Meeting also noted that, with regard to further development of international regulations, the above draft decision included an invitation to the Consultative Meeting either to set a legally binding ban on the disposal of low-level radioactive waste at sea or to expedite the work to complete studies on replacing the current voluntary moratorium on the disposal of low-level radioactive wastes at sea, taking into account the precautionary approach with a view to taking a well-informed decision on this issue. Another draft decision was that Governments and international organizations should not allow disposal of high, intermediate or low-level radioactive wastes into, under and "next" to the seabed.

4.3 The Consultative Meeting decided that the Secretariat should prepare a note, in co-operation with the Chairman and Vice-Chairman of the Inter-governmental Panel of Experts on Radioactive Waste Disposal at Sea (IGPRAD), reflecting that the second option was a more realistic

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reflection of present considerations within the London Dumping Convention, and submit it to the fourth session of the UNCED Preparatory Committee.

4.4 In connection with the above consideration the attention of the Preparatory Committee of UNCED is drawn to resolution LDC.21(9) by which Contracting Parties agreed to continue the suspension of all dumping at sea of radioactive wastes and other matter pending the completion of studies and assessments outlined in the operative paragraphs 2 to 5 of that resolution. Resolution LDC.21(9) is shown in annex 4. Since 1982 no permit has been issued by a Contracting Party for the disposal at sea of radioactive waste.

4.5 The Inter-governmental Panel of Experts on Radioactive Waste Disposal at Sea (IGPRAD) and the International Atomic Energy Agency (IAEA) have made considerable progress in carrying out the work requested by the above resolution. With regard to the establishment of an inventory of radioactive wastes from all sources entering the marine environment (operative paragraph 6 of resolution LDC.21(9)) the IAEA undertook to carry out the work; several reports in draft form have been made available to the Consultative Meeting.

4.6 The Fourteenth Consultative Meeting noted that IGPRAD and the IAEA will complete their work by mid-1993. The Sixteenth Consultative Meeting of Contracting Parties, scheduled for late 1993, will in the light of the results of the studies and assessments review its position concerning the disposal at sea of low-level radioactive wastes and other matter.

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ANNEX I

RESOLUTION LDC.40(13)

THE PROTECTION OF THE OCEANS AND ALL KINDS OF SEAS, INCLUDING ENCLOSED AND SEMI-ENCLOSED SEAS, AND COASTAL AREAS

THE THIRTEENTH CONSULTATIVE MEETING,

AWARE that the environment in general, and the marine environment in particular, has continued to deteriorate, notwithstanding the environmental protection measures already taken,

AWARE ALSO that the quantity, diversity and complexity of chemical compounds entering the environment make it extremely difficult to determine the overall threat to the environment,

RECOGNIZING that the volume of hazardous substances and wastes generated must be reduced if sustainable development is to be achieved and environmental security and human health are to be ensured for future generations,

CONSCIOUS that, notwithstanding the measures already adopted and implemented to protect the marine environment, additional measures are necessary to arrest and reverse marine ecosystem degradation, especially through alternative clean production methods applicable to hazardous waste streams,

RECALLING UNEP decision 15/27 of 25 May 1989, by which the Governing Council of the United Nations Environment Programme recommended the principle of precautionary action, the Governing Council's decisions SS.II/4B of 3 August 1990 on a comprehensive approach to hazardous waste and SS.II/6 of the same date on the need for effective global protection of ocean and coastal ecosystems,

NOTING that land-based sources of pollution constitute the major threat to the marine environment,

NOTING ALSO that no global instrument exists for the control of land-based sources of marine pollution, and that legal instruments for that purpose have been adopted in only five regions,

MINDFUL that existing pollution control approaches, under the London Dumping Convention, have been strengthened by shifting the emphasis from a system of controlled dumping based on assumptions regarding the assimilative capacity of the oceans, to approaches based on precaution and prevention,

NOTING FURTHER in this regard that national legislation in a number of countries prohibits the dumping at sea of industrial wastes and sewage sludge and that decisions and appeals for an end to dumping of wastes at sea have been made by a number of international fora,

/...

NOTING that regional conventions such as the Helsinki Convention for the protection of the Baltic Sea and the Oslo Convention for the protection of the North Sea and the North-east Atlantic have banned or are phasing out the dumping at sea of industrial wastes, sewage sludge and incineration of noxious liquid wastes at sea, and that other regional conventions such as those developed under the UNEP Regional Seas Programme, address waste disposal at sea,

REALIZING the need for international multilateral and bilateral co-operation and assistance, including the transfer of technology, the allocation of financial and other resources to developing countries, to implement the actions set out below,

STRESSING the important provisions concerning the preservation and protection of the marine environment contained in the UN Convention on the Law of the Sea, particularly Part XII,

RECOGNIZING ALSO the importance of the 1992 United Nations Conference on Environment and Development and the importance of making recommendations to national Governments and the appropriate international bodies responsible for the protection of the oceans,

NOTING FURTHER the resolution of the first meeting of the Preparatory Committee of the United Nations Conference on Environment and Development concerning the protection of oceans and all kinds of seas, including its reference to the need for an inter-governmental meeting of experts on land-based sources of marine pollution which will be hosted by Canada in May 1991,

RECOGNIZING FURTHER that it is important to adopt concrete, expeditious, action-oriented and far-reaching measures to achieve sustainable development before the ability to arrest and reverse environmental degradation is surpassed,

AGREES that Part XII of the UN Convention on the Law of the Sea dealing with the protection and preservation of the marine environment constitutes an appropriate global basis for a further elaboration of measures to protect the marine environment from pollution from all sources, through global, regional or bilateral arrangements,

AGREES FURTHER that the Preparatory Committee of the 1992 United Nations Conference on Environment and Development should recommend to the Conference that the following actions be taken:

1 That a global mechanism to co-ordinate the protection of the marine environment from pollution from all sources should be considered. Taking into account existing international agreements, co-ordination may embrace such matters as: accidental and operational pollution from vessels, dumping, pollution from land-based sources, atmospheric pollution, offshore industry, and disposal of wastes into the sea-bed as well as

liability, and mechanisms for transfer of technology and financial resources, and arrangements concerning liability and compensation;

That a global instrument, as well as new or improved regional agreements, for the prevention, reduction and control of land-based sources of marine pollution should be considered. At the global level, such an instrument could be in the form of a declaration of basic principles, a code of conduct for States or a convention. The Montreal Guidelines (UNEP 1985) for the Protection of the Marine Environment against Pollution from Land-based Sources would be an important component of this process. This should take into account, inter alia, a precautionary approach, encouraging the adoption of clean production methods that reduce the generation of hazardous substances;

3 That States and appropriate international fora should also pursue a precautionary approach in addressing waste management problems by, inter alia, focussing on environmentally preferable land-based alternatives to disposal of waste at sea, while ensuring that pollution is not transferred to other parts of the environment via other disposal routes;

4 That national, regional and global fora should actively pursue the elimination of marine pollution through, inter alia, the adoption, implementation and enforcement of more stringent national and regional controls and the active pursuit of such technological and economic measures as clean production methods, including raw materials selection, product substitution and clean production technologies and processes; and

5 That all States which have not yet done so should ratify or accede to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and other Matters;

URGES the Preparatory Committee of the United Nations Conference on Environment and Development to address diligently the need for all States to be able to contribute in the pursuit of the objective of a clean marine environment. International agencies, governments and the private sector should be encouraged to take expeditious steps to strengthen the mechanisms for providing co operation, transfer of technology and assistance that would improve the capacity of developing countries to implement the measures contained in this resolution.

...

ANNEX 2

RESOLUTION LDC.46(14)

LIAISON WITH REGIONAL ORGANIZATIONS

THE FOURTEENTH CONSULTATIVE MEETING,

RECALLING Article I of the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter 1972 (the London Dumping Convention), which states that Contracting Parties shall individually and collectively promote the effective control of all sources of pollution of the marine environment,

RECALLING ALSO Article II of the Convention requesting Contracting Parties to take effective measures individually and collectively to prevent marine pollution caused by dumping and to harmonize their policies in this regard,

RECALLING FURTHER Article VIII by which Contracting Parties with common interests to protect the marine environment in a given geographical area shall endeavour to enter into regional agreements consistent with this Convention for the prevention of pollution, especially by dumping, and that Contracting Parties shall seek to co-operate with the Parties to regional agreements in order to develop harmonized procedures to be followed by Contracting Parties to the different agreements concerned,

RECOGNIZING that the functions of the Consultative Meeting pursuant to Article XIV (4) include the continuing review of the implementation of the Convention by inter-alia promoting co-operation with and between regional organizations concerned with the prevention of marine pollution,

HAVING NOTED the report of its Steering Group on a Long-term Strategy for the London Dumping Convention which emphasizes that more geographical areas should be covered by regional agreements on the prevention of marine pollution, especially by dumping,

HAVING NOTED FURTHER the recommendations of its Task Team 2000 that the linkages between the Consultative Meeting and other organizations dealing with marine pollution should be strengthened, that the dialogue amongst representatives of regional and global bodies on the prevention and control of marine pollution should be increased, and that the harmonization of control procedures and principles should be encouraged between the London Dumping Convention and other international agreements on marine pollution prevention,

REAFFIRMING the important role of regional organizations in the protection of the marine environment and the importance of good co-operation between Consultative Meetings and such regional bodies,

/...

REAFFIRMING FURTHER its recommendation addressed to the Preparatory Committee of the United Nations Conference on Environment and Development (resolution LDC.40(13)) that a global mechanism to co-ordinate the protection of the marine environment from pollution from all sources should be considered; that the adoption, implementation and enforcement of more stringent national and regional controls and the active pursuit of technological and economic measures, such as clean production methods, should be actively pursued; and that all States which have not yet done so should ratify or accede to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter,

ACKNOWLEDGING the role of the Office for the London Dumping Convention created by the Secretary-General of the International Maritime Organization (IMO), to further the effective implementation of the Convention,

1 INVITES regional organizations established under regional agreements for the protection of the marine environment to support actively initiatives taken within the framework of the London Dumping Convention to promote the effective control all sources of pollution of the marine environment and in particular to take effective measures to prevent marine pollution caused by dumping,

2 ENCOURAGES regional organizations to be represented at Consultative Meetings and meetings of subsidiary bodies and to inform the respective meetings of the measures taken for the protection of the marine environment within the framework of their regional agreements, including achievements made in the field of monitoring the condition of their regional sea areas and relevant scientific research,

3 REQUESTS Contracting Parties to support the United Nations Environment Programme (UNEP) in its efforts to increase the number of areas covered by regional action plans, to ratify or accede to legal instruments developed under regional action plans and to effectively implement requirements of action plans that are in operation,

4 DIRECTS the Office for the London Dumping Convention of IMO to enhance co-operation with regional organizations and with UNEP's Oceans and Coastal Areas Programme Activity Centre (OCA/PAC) to encourage the harmonization of principles and control procedures between regional agreements on the protection of the marine environment and the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter,

5 INVITES:

(a) the Executive Director of UNEP to bring this resolution to the attention of the Governing Council of UNEP and to urge countries that are not yet Contracting Parties to the London Dumping Convention, in particular those countries that are Contracting Parties to a regional convention, to ratify or accede to the Convention as soon as possible or to inform the Secretary-General of IMO of any specific problems they may have and assistance they may require in implementing the Convention,

(b) the Executive Heads of regional bodies established for the protection of the marine environment to inform their membership of the above.

ANNEX 1

RESOLUTION LDC.44(14)

THE APPLICATION OF A PRECAUTIONARY APPROACH IN ENVIRONMENTAL PROTECTION WITHIN THE FRAMEWORK OF THE LONDON DUMPING CONVENTION

THE FOURTEENTH CONSULTATIVE MEETING,

HAVING REGARD to the responsibilities of Contracting Parties, especially in relation to Articles I and II of the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972 (the London Dumping Convention),

AWARE of the concern regarding the health and preservation of the marine environment,

AWARE ALSO that the quantity, diversity and complexity of chemical compounds entering the environment make it difficult to determine the overall threat to the environment,

RECOGNIZING that human activities and social development need to be managed in a manner that will limit contamination of the marine environment by wastes and other matter, and thereby to ensure that the viability of marine ecosystems and the legitimate uses of the sea are sustained for the benefit of present and future generations,

RECALLING resolution LDC.40(13) of 2 November 1990 concerning the protection of the oceans and all kinds of seas, including enclosed and semi-enclosed seas, and coastal areas,

RECALLING ALSO UNEP decision 15/27 of 25 May 1989, by which the Governing Council of the United Nations Environment Programme recommended the principle of precautionary action, the Governing Council's decision SS.II/4B of 3 August 1990 on a comprehensive approach to hazardous waste, and its decision SS.II/6 of the same date on the effective global protection of ocean and coastal ecosystems,

RECALLING FURTHER the decisions taken in other international fora on a precautionary approach to environmental protection,

MINDFUL that existing pollution control approaches, under the London Dumping Convention, have been strengthened by shifting the emphasis from a system of controlled dumping based on assumptions of the assimilative capacity of the oceans, to approaches based on precaution and prevention,

RECOGNIZING FURTHER the work on the development of an improved framework for the implementation of the London Dumping Convention,

1 AGREES that in implementing the London Dumping Convention the Contracting Parties shall be guided by a precautionary approach to environmental protection whereby appropriate preventive measures are taken when there is reason to believe that substances or energy introduced in the marine environment are likely to cause harm even when there is no conclusive evidence to prove a causal relation between inputs and their effects;

2 AGREES FURTHER that Contracting Parties shall take all necessary steps to ensure the effective implementation of the precautionary approach to environmental protection and to this end they shall:

(a) encourage prevention of pollution at the source, by the application of clean production methods, including raw materials selection, product substitution and clean production technologies and processes and waste minimization throughout society;

(b) evaluate the environmental and economic consequences of alternative methods of waste management, including long-term consequences;

(c) encourage and use as fully as possible scientific and socio-economic research in order to achieve an improved understanding on which to base long-range policy options;

(d) endeavour to reduce risk and scientific uncertainty relating to proposed disposal operations; and

(e) continue to take measures to ensure that potential adverse impacts of any dumping are minimized, and that adequate monitoring is provided for early detection and mitigation of these impacts; and

3 INVITES the Secretary General of the International Maritime Organization to bring this resolution to the attention of the Preparatory Committee of the 1992 United Nations Conference on Environment and Development.

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ANNEX 4

RESOLUTION LDC.21(9)

DUMPING OF RADIOACTIVE WASTES AT SEA

THE NINTH CONSULTATIVE MEETING,

RECOGNIZING that the marine environment and the living resources of the sea are of vital importance to all nations and that the objective of the London Dumping Convention is to prevent the pollution of the seas by dumping,

CONSIDERING that the Convention should continue to provide an effective global forum for the Contracting Parties in which to pool the advances of science and technology in their effort to combat marine pollution,

TAKING NOTE of the increasing concern of a growing body of public opinion, and in particular among the populations living near present or potential dumping sites, with regard to the dumping of radioactive wastes at sea,

RECOGNIZING that dumping of radioactive wastes at sea may adversely affect the environment of other nations and of regions located beyond the limits of national jurisdiction in contravention with Principle 21 of the UN Declaration on the Human Environment adopted in Stockholm in June 1972,

RECOGNIZING that, under Article I of the Convention, Contracting Parties have pledged themselves specially to take all practicable steps to prevent the pollution of the seas by the dumping of wastes and other matter that is liable to create hazards to human health, to harm living resources and marine life, to damage amenities or to interfere with other legitimate uses of the sea,

RECALLING that the Seventh Consultative Meeting in February 1983 adopted resolution LDC.14(7) which called for the suspension of all dumping at sea of radioactive materials pending the presentation to the Contracting Parties of the final report of an expert meeting on radioactive matters related to the London Dumping Convention,

/...

RECOGNIZING that the practice of dumping radioactive wastes at sea has been limited to a few States which have halted such dumping since the adoption of resolution LDC.14(7) of February 1983,

NOTING the findings of the Expert Panel on the Disposal at Sea of Radioactive Wastes contained in document LDC 9/4, Annex 2, and expressing its appreciation to the experts involved in the preparation of this report,

NOTING that the Expanded Panel of Experts recognizes deficiencies in scientific information that need to be resolved for a rigorous and precise assessment of the consequences of sea dumping of radioactive wastes,

ACCEPTING that, as noted by the Expert Panel, in the comparison between options, social, economic, scientific and technological factors are difficult to quantify on a common basis, especially where the social factors have international dimensions; and that, as also noted by the Expert Panel, in the final analysis social and related factors may outweigh those of a purely scientific and technical nature.

NOTING also the absence of comparison between land-based and sea dumping options.

1. AGREES to a suspension of all dumping at sea of radioactive wastes and other radioactive matter to permit time for the further consideration of issues which would provide a broader basis for an informed judgement on proposals for the amendment of the Annexes of the Convention. This suspension will continue pending the completion of the studies and assessments referred to in paragraphs 2 to 3 hereunder;

2. REQUESTS that additional studies and assessments of the wider political, legal, economic and social aspects of radioactive waste dumping at sea be undertaken by a panel of experts to complement the existing Expanded Panel Report;

3. REQUESTS that further assessments examine the issue of comparative land-based options and the costs and risks associated with these options

/...

4. REQUESTS that studies and assessments examine the question of whether it can be proven that any dumping of radioactive wastes and other radioactive matter at sea will not harm human life and/or cause significant damage to the marine environment;

5. REQUESTS the IAEA to advise Contracting Parties with respect to certain outstanding scientific and technical issues relating to the sea dumping of radioactive wastes; specifically:

   (a) To determine whether additional risks to those considered in the revised IAEA Definition and Recommendations justify re-examination of the definition of radioactive wastes and other radioactive matter unsuitable for dumping at sea for certain individual radionuclides;

   (b) To establish source (dose) upper bounds appropriate to the practice of radioactive waste dumping under the Convention;

   (c) To define quantitatively the exempt levels of radionuclides for the purposes of the Convention,

6. REQUESTS the Organization to approach appropriate international agencies to establish and maintain an inventory of radioactive wastes from all sources entering the marine environment;

7. CALLS UPON Contracting Parties to develop, as envisaged in Article 4, procedures for the assessment of liability in accordance with the principles of international law regarding State responsibility for damage to the environment of other States or to any other area of the environment resulting from dumping.

ANNEX 5

STATEMENT BY THE FOURTEENTH CONSULTATIVE MEETING OF CONTRACTING PARTIES TO THE CONVENTION ON THE PREVENTION OF MARINE POLLUTION BY DUMPING OF WASTES AND OTHER MATTER, 1972

The Contracting Parties and observers to the Fourteenth Consultative Meeting accepted the following re-statement of their views on the matter of marine pollution and the forthcoming United Nations Conference on Environment and Development (UNCED) in 1992.

1 In June, 1972, representatives of governments, inter-governmental agencies, non-governmental organizations and the private sector from around the globe came together in Stockholm, Sweden, for the United Nations Conference on the Human Environment. At that historic gathering, on a wide range of issues the conference called upon Governments and peoples to exert common efforts for the preservation and improvement of the environment, for the benefit of all the people and for their posterity.

2 For the oceans, a new impetus to the development of international rules applicable to ocean dumping resulted from the Stockholm Conference. Principle 7 of the Stockholm Declaration calls upon States to "take all possible steps to prevent pollution of the seas by substances that are liable to create hazards to human health, to harm living resources and marine life, to damage amenities or to interfere with other legitimate uses of the sea". Among other recommendations emanating from the Stockholm Action Plan, special reference was made to the need (Rec. 86) for "an overall instrument for the control of ocean dumping ....".

3 Although the Stockholm principles and recommendations were not directly binding on States, they provided the backdrop and prelude to the adoption of the Convention on the Prevention of Pollution by Dumping of Wastes and Other Matter (the London Dumping Convention) in November of that same year. That agreement represented a significant step forward in the international protection of ocean resources. Having come into force in 1975, to date the London Dumping Convention has 67 Contracting Parties.

4 The basic purpose of the London Dumping Convention is to encourage nations of the world to work together to ensure that the marine environment is protected from the hazards of dumping. Protection of the marine environment, broadly defined, is the foundation of the London Dumping Convention. Article I provides that "Contracting Parties shall individually and collectively promote the effective control of all sources of pollution of the marine environment ....", while also incorporating the commitments contained in Principle 7 of the Stockholm Declaration.

5 With fifteen years of operational experience, the Contracting Parties have faced an array of challenges in their efforts to protect the marine environment. There resides within the London Dumping Convention substantial

expertise on matters related to ocean dumping specifically, and to broader marine pollution issues. Important refinements of allowable practices have been forged during discussions and debate in the London Dumping Convention's formal Consultative Meetings, with intersessional guidance from subsidiary bodies. Those refinements include: an indefinite moratorium on low-level radioactive waste dumping at sea, dating back to 1983, that is the subject of ongoing risk-related assessments; agreement in 1988 to proceed towards the termination of ocean incineration of liquid noxious wastes by 1994 or earlier; and a decision in November 1990 to phase out industrial waste dumping at sea by 1995. Substantial expertise also has been devoted to developing guidance on the Annexes to the London Dumping Convention to assist governments in assessing the impacts of, and need for, ocean disposal of wastes.

6 In 1991 a resolution was adopted on the application of a precautionary approach in environmental protection within the framework of the London Dumping Convention (Res.44(14), expressing the need that Contracting Parties take action at source through the application of clean production technologies and waste minimization and that a comprehensive or integrated approach to waste management be applied which, inter alia stresses the need to assess the overall and comparative detriment to the environment when considering different disposal options.

7 In co-operation with ten other international organizations the London Dumping Convention initiated in 1991 the "Global Waste Survey" which will provide by 1994 an inventory of industrial wastes problems and land-based options to deal with these wastes, to identify and resolve obstacles to such options, together with an action plan. This survey is carried out to assist Contracting Parties to evaluate and implement actions on banning incineration at sea and dumping of industrial wastes. In addition, the Consultative Meeting agreed to begin the process of amending the convention to modify resolutions adopted over the last decade.

8 By resolution LDC.46(14), the Contracting Parties call upon relevant international organizations and the Consultative Meeting to co-ordinate and encourage the harmonization of policies and to mutually support and participate in activities to promote the prevention of pollution in the marine environment.

9 The Contracting Parties to the London Dumping Convention, as well as the inter-governmental bodies and international non-governmental observers that have been involved in work under the London Dumping Convention, represent a powerful lobbying force for the oceans. Their collective skills have been brought to bear on matters directly related to the London Dumping Convention as well as to marine pollution concerns beyond its scope.

10 As a result, the Contracting Parties at the Thirteenth Consultative Meeting adopted resolution LDC.40(13) addressing the Preparatory Committee for the United Nations Conference on Environment and Development to be held in Brazil in 1992 (A/CONF.151/PC/31 of 23 January 1991). This resolution recommends the Conference to consider:

.1 the creation of a global mechanism to co-ordinate the protection of the marine environment from land sources;

.2 a global instrument and new and improved regional agreements to address land-based sources of marine pollution;

/...

.3 the need to address waste management issues by focusing, inter alia, on environmentally acceptable land-based alternatives to disposal of wastes into the ocean;

.4 the need to pursue the elimination of marine pollution through such activities as the adoption, implementation and enforcement of more stringent national and regional controls and the establishment of such measures as clean production methods and technologies; and

.5 the mechanisms required to provide co-operation, transfer of technology and other assistance to developing countries in order that they can fully participate in the above actions.

11 In anticipation of decisions being taken at UNCED the Contracting Parties to the London Dumping Convention have been reviewing their responsibilities under the Articles of the Convention, how gaps and overlaps between the London Dumping Convention and other global and regional agreements concerned with marine pollution can be addressed. In addition, the Contracting Parties have been reviewing the potential use of an expanded convention to assist in related marine environmental issues, as may be decided by UNCED: Examples of these could include offshore activities, effective application of enforcement in international waters, remedial programmes, etc.

12 The Consultative Meeting of Contracting Parties to the London Dumping Convention re-emphasizes its expertise in global marine pollution issues and its willingness to address action items arising from UNCED as early as the Fifteenth Consultative Meeting in November 1992.

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PREPARATORY COMMITTEE FOR THE
UNITED NATIONS CONFERENCE
ON ENVIRONMENT AND
DEVELOPMENT
Fourth session
New York, 2 March-3 April 1992
Item 2 (b) of the provisional
agenda*

PREPARATIONS FOR THE UNITED NATIONS CONFERENCE ON ENVIRONMENT AND DEVELOPMENT ON THE BASIS OF GENERAL ASSEMBLY RESOLUTION 44/228 AND TAKING INTO ACCOUNT OTHER RELEVANT GENERAL ASSEMBLY RESOLUTIONS: RELEVANT ACTIONS OF INTERGOVERNMENTAL AND OTHER BODIES OF RELEVANCE TO THE PREPARATORY PROCESS

Note by the Secretary-General of the Conference

The Secretary-General of the United Nations Conference on Environment and Development has the honour to transmit to the Preparatory Committee for the Conference at its fourth session the report of the UNIDO Conference on Ecologically Sustainable Industrial Development (see annex). In its resolution GC.4/Res.18, the Fourth General Conference of UNIDO requested that the report be transmitted to the Preparatory Committee.

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* A/CONF.151/PC/96.

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ANNEX

UNIDO ENVIRONMENT PROGRAMME

Report of the Conference on Ecologically Sustainable Industrial Development

Note by the Director-General

1. The present document contains the report of the UNIDO Conference on Ecologically Sustainable Industrial Development, held at Copenhagen, Denmark, from 14 to 18 October 1991. The Conference was held at the invitation of and with financial support from the Government of Denmark. The reports of the technical symposiums on ecologically sustainable industrial development (ESID) are contained in annex I to the present report. The list of participants will be made available to the General Conference.

ACTION REQUIRED OF THE GENERAL CONFERENCE

2. The General Conference may wish to endorse the present report and the conclusions and recommendations of the Conference on Ecologically Sustainable Industrial Development as the main input of UNIDO to the United Nations Conference on Environment and Development (UNCED), to be held at Rio de Janeiro, Brazil, in June 1992, and recommend that the contents of the report serve as a basis for the further development of activities carried out under the UNIDO Environment Programme.

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* Previously issued under the UNIDO symbol GC.4/25/Add.1.

REPORT OF THE CONFERENCE ON ECOLOGICALLY SUSTAINABLE INUSTRIAL DEVELOPMENT

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Introduction

1. The Conference on Ecologically Sustainable Industrial Development organized by UNIDO was held at Copenhagen, Denmark, at ministerial level from 14 to 18 October 1991. The Conference was attended by representatives of Member States of UNIDO as well as intergovernmental organizations, industry and non-governmental organizations who participated as observers.

2. The objectives of the Conference were as follows:

(a) To clarify the issues related to ecologically sustainable industrial development (ESID) in all countries, particularly in developing countries, and the manner in which environmental concerns can be integrated into the ongoing industrialization process;

(b) To suggest some important roles for Governments, international organizations, industry, and non-governmental organizations in this regard;

(c) To suggest the role that UNIDO, in cooperation with other United Nations organs, organizations and programmes, could play in supporting such an effort, at both the policy and operational levels; and

(d) To provide an input on industry and the environment for consideration at the United Nations Conference on Environment and Development (UNCED) to be held at Rio de Janairo, Brazil, in June 1992.

3. The following countries were represented at the Conference:

Afghanistan, Algeria, Argentina, Austria, Bangladesh, Barbados, Belgium, Belize, Botswana, Brazil, Bulgaria, Burkina Faso, Burundi, Cameroon, Canada, Cape Verde, Central African Republic, Chad, Chile, China, Colombia, Comoros, Congo, Czechoslovakia, Denmark, Dominican Republic, Ecuador, Egypt, Equatorial Guinea, Finland, France, Gambia, Germany, Ghana, Greece, Guatemala, Guinea, Haiti, Hungary, India, Indonesia, Iran (Islamic Republic of), Italy, Jamaica, Japan, Kenya, Lesotho, Luxembourg, Madagascar, Malawi, Malaysia, Mali, Mauritius, Mexico, Morocco, Mozambique, Nepal, Netherlands, Norway, Papua New Guinea, Peru, Poland, Portugal, Qatar, Republic of Korea, Romania, Rwanda, Saint Kitts and Nevis, Saint Vincent and the Grenadines, Sao Tome and Principe, Saudi Arabia, Senegal, Sierra Leone, Spain, Sudan, Swaziland, Sweden, Switzerland, Syrian Arab Republic, Thailand, Togo, Tunisia, Turkey, Uganda, Ukraine, Union of Soviet Socialist Republics, United Arab Emirates, United Kingdom of Great Britain and Northern Ireland, United Republic of Tanzania, United States of America, Uruguay, Venezuela, Yemen, Zambia, Zimbabwe.

4. Anguilla, Antigua and Barbuda, Australia, Yugoslavia and Holy See participated as observers.

5. The following organs and offices of the United Nations system were represented:

Department of Technical Cooperation and Development, International Trade Centre UNCTAD/GATT, United Nations Conference on Environment and Development, United Nations Centre for Science and Technology on Development, United Nations Centre for Transnational Corporations, United Nations Development Programme, United Nations Environment Programme, Economic Commission for Europe, Economic and Social Commission for Asia and the Pacific, Economic and Social Commission for Western Asia.

6. The following United Nations specialized and other agencies were represented:

International Labour Office, Food and Agriculture Organization of the United Nations, United Nations Educational, Scientific and Cultural Organization, World Health Organization, General Agreement on Tariffs and Trade.

7. The following other intergovernmental organizations were represented:

Commonwealth Secretariat, European Economic Community, Organization for Economic Cooperation and Development, Nordic Council of Ministers, Organization of Arab Petroleum Exporting Countries, Organization of Petroleum Exporting Countries, Centre for the Development of Industry of the EEC, International Institute for Applied Systems Analysis.

8. The meeting was also attended by representatives of the following non-governmental organizations:

Business Council for Sustainable Development, Centre for Science and Environment, Centre for the Development of Industry, European Confederation of Pulp and Paper and Board Industries, Conservation International, Danish Toxicology Centre, Development Horizons Trust, European Chemical Industry Council, Danish Society for the Conservation of Nature, Greenpeace International, Industriraadet, Institutraadet, Institute for European Environmental Policy, International Chamber of Commerce, Mauritius Chamber of Commerce and Industry, International Confederation of Free Trade Unions, International Cooperative Alliance, International Council of Scientific Unions, International Fertilizer Industry Association, International Institute for Environment and Development, International Life Sciences Institute, International Network for Environmental Management, International Union of Architects, European Centre for Plastics in the Environment, International Youth and Students Movement for United Nations, Mazingira Institute, Vor Falles Fremtid, World Association of Industrial and Technological Research Organizations, World Coal Institute, World Conservation Union, World Wide Fund for Nature, OIKOS.

Agenda item 1: Opening of the Conference

9. The Conference was formally opened by His Royal Highness, Crown Prince Frederik of Denmark. Inaugural statements were made by Anne Birgitte Lundholt, Minister for Industry and Energy of Denmark, and Domingo L. Siazon Jr., Director-General of UNIDO.

Agenda item 2: Election of officers

10. A. B. Lundholt, Minister for Industry and Energy of Denmark, was elected by acclamation to the office of President.

11. The following other members of the Bureau were elected by acclamation:

Vice-Presidents: L. Alvarado (Chile)
C. Forero Pineda (Colombia)
M. Gerente (France)
B. Botos (Hungary)
N. R. Krishnan (India)
H. Mahrou (Iran, Islamic Republic of)
B. Baszczyk (Poland)
J. A. Knauss (United States of America)
M. Malianga (Zimbabwe)

Rapporteur-General: C. Uteem (Mauritius)

B. D. Nielsen (Denmark) was appointed Secretary-General of the Conference.

Agenda item 3: Adoption of the agenda

12. The provisional agenda, as contained in document ID/WG.516/12, was adopted without amendments.

Agenda item 4: Adoption of the rules of procedure

13. The draft rules of procedure for the Conference, contained in document ID/WG.516/11, were adopted without dissent.

Agenda item 5: Ecologically Sustainable Industrial Development

I. Presentation of the themes

14. In the course of their work, the Ministers present at the Conference examined a wide variety of issues relating to ESID. It was agreed that all issues were closely interrelated and that particular attention should be given to the problems confronting the developing countries. The Ministers also noted with concern the particular environmental problems of countries in Central and Eastern Europe. The Ministers agreed that their conclusions and recommendations should lead to specific proposals for implementing a strategy at the national, regional and international levels and through UNIDO in support of ESID. They agreed to transmit their conclusions, recommendations and suggestions to the fourth session of the General Conference of UNIDO and recommended that those conclusions, recommendations and suggestions should also form the basis of the contribution of UNIDO to the United Nations Conference on Environment and Development (UNCED), to be held at Rio de Janeiro, Brazil, in June 1992.

15. Discussion at the Conference was focused on three major themes, each of which was introduced by keynote speakers representing the various categories of participants:

(a) The road to ecologically sustainable industrial development and barriers facing the achievement of ecologically sustainable industrial development

Introductory statements were made by the Director-General of Colciencias (Colombia), the Executive Secretary of the Economic Commission for Europe, the Executive Director of the Business Council for Sustainable Development and the Executive Director of the International Institute for Environment and Development.

(b) Government and industry initiatives in achieving ecologically sustainable industrial development

The debate on initiatives by government and industry in achieving ESID was introduced by the Minister of Environment of Czechoslovakia. Introductory statements were made by the Executive Director of the United Nations Centre on Transnational Corporations, the Secretary-General of the International Chamber of Commerce and the Chairman of the Centre on Science and Environment.

(c) International co-operation in achieving ecologically sustainable industrial development and the role of UNIDO.

The debate on international co-operation in achieving ESID was introduced by the Under-Secretary of Commerce of the United States of America, the Head of Pollution Control Division in the Environment Directorate of the Organization for Economic Co-operation and Development, the Executive Director of the Mazingira Institute (Kenya), and the Secretary-General of the Second World Industry Conference on Environmental Management. The debate was closed with a statement by the Secretary-General of the United Nations Conference on Environment and Development. General statements pertaining to the work of the ESID Conference were made by the representatives of two NGOs, namely Vor Falles Fremtid and the International Fertilizer Industry Association.

II. Conclusions and recommendations

16. The conclusions and recommendations adopted by the Conference are contained in paragraphs 17 to 44 below.

A. GENERAL CONSIDERATIONS

17. The Ministers noted with concern that, although successes had occurred in the 1970s, the gap between developed and developing countries in terms of per capita income and per capita industrial output narrowed slightly between 1970 and 1990. Industrialization, the well-trodden path to the achievement of higher standards of living and expanded economic development, remained a distant goal for many developing countries.

18. The Ministers noted that threats to the environment were a common concern. They stated that all countries should take effective action to protect and enhance the environment in accordance with their responsibilities and respective capacities. In this regard, the Ministers confirmed that in developing strategies to secure agreement on, and commitments by, Governments on major environmental issues, it has been recognized that:

(a) Because the greater part of current emission of pollution into the environment originates in developed countries, these countries bear the main responsibility for combating such pollution;

(b) International cooperation between all countries, and in particular between developed and developing countries, is essential to acquiring and using relevant scientific information and environmentally sound technologies. Industrialized countries with significant experience in pollution prevention, cleaner production methods and pollution control technologies are encouraged to promote industrial pollution prevention and management world wide. Economic well-being is essential for achieving sustainable development and minimizing the degradation of the environment concomitant with such growth. Ministers called on Governments and industry to cooperate at the local, national and regional levels in using existing and, where necessary, establishing new mechanisms that promote pollution prevention, waste minimization, cleaner production, energy efficiency and rational use of natural resources and in making these techniques and technologies available, particularly to developing countries. This would entail the mobilization of financial resources and enhanced technical cooperation in particular with developing countries, at the bilateral and multilateral levels. However, it was also recognized that new and additional financial resources will have to be channelled to developing countries in order to ensure their full participation in global efforts for environmental protection.

19. Ministers recognized that economic, social and environmental elements of the decision-making process should be fully integrated, and that there was a fundamental mutual dependence between economic growth and environmental protection. Ministers noted that sustained economic growth and effective environmental protection are closely interlinked and should not be looked upon as competitive policy objectives.

20. The continuing deterioration of the global environment is closely related to the unsustainable pattern of production and consumption in particular in industrialized countries. In developing countries, environmental degradation is closely related to poverty and underdevelopment, as well as demographic patterns and pressures. Promotion of economic and social development is therefore essential for the protection of the environment.

21. The Ministers noted with concern the financial and technological constraints facing the developing countries in realizing the desired ecologically sustainable industrial development.

22. The Conference was held at the time when economic reforms to strengthen the private sector and harness market forces in support of economic development were being carried out in a number of countries. The need was recognized for economic instruments to supplement public regulations. Ministers stressed that market-oriented instruments could play an increasing role in achieving ESID, in particular by internalizing environment considerations. Assistance should be provided upon request, by donors and international organizations, to countries that needed to develop such instruments and to administer them.

23. The Ministers called for new approaches to industrialization that would allow industry to contribute to economic and social benefits for present generations without compromising the ability of future generations to meet their own needs, and without impairing basic ecological processes. These new approaches do not imply in any way encroachment upon national sovereignty. States have, in accordance with the Charter of the United Nations and the applicable principles of international law, the sovereign right to exploit their own resources pursuant to their environmental policies. This also reaffirms their responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States. Those new approaches would enhance economic development over time through the efficient and rational management of both renewable and non-renewable resources while aiming at minimizing waste. They would differ from country to country, depending on the resource endowments, the stage of development and other economic and social characteristics as well as the assimilative capacity of the ecosystem.

24. The Ministers agreed that the reduction of pollution intensity across all media within industry, through cleaner production, was the key to achieving ESID. Thus, the development of technology to promote cleaner production should be enhanced. The objective of cleaner production, with its focus on source reduction, waste minimization, energy efficiency and low-waste and non-waste technology, is to prevent or minimize, in the most cost-efficient manner, the short- and long-term risks to humans and the environment. Cleaner production would require a management approach that, inter alia:

(a) Assigned priority to the efficient use of resources, materials substitution and product reformulation, process modification and equipment redesign to lower waste technologies, and recycling and reuse as the primary options for pollution prevention and increased profitability;

(b) Utilized safe and environmentally sound processes, technologies and substances combined with efficient operating procedures;

(c) Assigned clear responsibility and incentives for pollution prevention and control, in the context of a regulatory framework that establishes achievable environmental goals and that provides industry with flexibility in the choice of response actions.

25. Ministers recognized the importance of providing women with knowledge on ESID, as well as access to the necessary measures to promote it.

26. The Ministers agreed to support action to overcome barriers to the achievement of ESID. Among those barriers are the difficulties of implementing policies both in the North and the South that would bring about a transition to ESID. Industry everywhere needed to re-examine its attitudes on pollution prevention, cleaner production and environmentally friendly products.

B. INDUSTRY INITIATIVES IN ACHIEVING ESID

27. The Ministers recognized that industry and industrial institutions had to play a central role in the transition to ESID. While Governments can assist, regulate and control that transition, it is essential that industry acts in accordance with the principles implied by ESID. The relevant organizations and institutions should promote managerial practices and technologies based on the principles of sustainability.

28. The Ministers agreed that, in order to achieve ESID, industry initiatives should include the following objectives:

(a) Adoption of pollution prevention, the approach that prevents pollution at the source in products and manufacturing processes rather than removing it after it has been created;

(b) Integration of environmental awareness and responsibility at all management levels, taking into account careful analysis of relative risks, introduction of waste minimization and environmental compliance auditing, establishment of emergency, risk and safety management systems, as well as training programmes;

(c) Adherence to environmental codes of conduct, including voluntary ones, for industrial investment and production;

(d) Increase of R and D activities with emphasis on cleaner production technologies, giving priority to technologies that offer potential for improved efficiency and reduced pollution; and provide training facilities to developing countries for this purpose;

(e) Consideration, where feasible, of the use of substitute materials and product reformulations, process modifications and equipment redesigns, renewable sources of energy and raw materials, recycling and reuse of waste and scrap materials;

(f) Assumption of a "cradle-to-grave" assessment approach to industrial products and projects;

(g) Application of cleaner industrial production processes and more rational use of natural resources;

(h) Development, transfer and adaptation of environmentally sound technologies, know-how and skills to meet the needs of other countries, in particular developing countries, and mobilization of financial resources and provision of human resources for this purpose;

(i) Encouragement of industry to provide information on environmentally sound management and energy conservation.

The foregoing objectives could be facilitated by regular exchanges of experiences in the context of long-term programmes developed by industry.

29. The Ministers recognized that the Economic and Social Council, at its second regular session of 1991, had addressed ways to encourage and mobilize industrial enterprises, including transnational corporations, to cooperate in efforts to protect and enhance the environment in all countries. In that regard, the Council adopted resolution E/1991/55, requesting, inter alia, the preparation of action-oriented and practicable recommendations for consideration by the Commission on Transnational Corporations and by the Preparatory Committee of the United Nations Conference on Environment and Development.

30. The Ministers recognized that many transnational companies and investors involved in international joint ventures or in the export of manufacturing processes implement ESID and apply general standards of environmental responsibility to their foreign operations which are fully consistent with those used in their home countries and in compliance with the laws and regulations of host countries. These standards should not be applied on a discriminatory basis. Ministers encouraged all companies to adopt this policy and subscribe to a rational and precautionary approach to anticipating and preventing the causes of serious or irreversible environmental degradation consistent with scientific and technical understanding and the economical use of resources.

31. The Ministers encouraged non-governmental organizations representing all the parties involved in the industrial process, including industrial federations, trade unions, and consumers and environmental groups, to carry out and participate in activities relevant to ESID.

32. UNIDO undertook five case studies for the preparation of the Conference to illustrate the scope for ESID. These case studies covered pulp and paper, leather industry, alumina industry, plastics and plastics waste recycling, and phosphate fertilizers. The studies presented a number of problems related to unsustainable production processes and suggested measures to solve them. Ministers emphasized the importance of ensuring close cooperation between industry, Governments and international organizations in solving those problems.

C. GOVERNMENT INITIATIVES IN ACHIEVING ESID

33. The Ministers agreed that Governments could:

(a) Review the environmental impact of current and planned policies, regulations and institutional infrastructure that affect industry and environment with a view to contributing to the transition to ESID through appropriate policies and measures;

(b) Review the environmental impact of current and planned policies and build in the environmental concerns as an integrated part in such policies and strategies;

(c) Design suitable methods and tools for quantification and valuation of natural and environmental resources used by industry;

(d) Establish new, or strengthen existing procedures for reviewing industrial projects with potentially significant environmental effects. Similar procedures should be applied for reviewing risks associated with products. The evaluation and assessment procedures should be based on a cradle-to-grave approach and continue during and after completion of projects. The evaluation and assessment procedures should be supported by internationally recognized ecological guidelines and indicators where these exist;

(e) Apply, with due consideration for the economic and social conditions in specific countries, a balanced mix of regulatory and economic instruments, including the internalization of externalities in price calculations, to reach the objectives of industrial development and environmental protection;

(f) Design policies based on the "polluter pays" principle, bearing in mind the need to internalize the cost of environment protection in price calculations, and to apply a precautionary approach and the principle of economic efficiency when undertaking or promoting investments. Inclusion of the cost for pollution abatement in entrepreneurial calculations would thus be a useful approach governing the use of economic instruments and help to achieve a better allocation of resources in the pursuit of environmentally sustainable industrial development;

(g) Implement schemes for increasing public awareness, particularly in the younger generation, of the necessity for ESID and the responsibility of individual enterprises, managers, engineers, workers and other members of staff in that respect;

(h) Give active encouragement to ESID through research, development, acquisition and transfer of techniques and technologies, as well as efficient utilization of existing relevant technologies in the public and private sectors, and through public and private partnerships while ensuring occupational health and safety;

(i) Promote technical and managerial training and education that incorporate ESID in both informal and formal sectors;

(j) Create an adequate institutional framework to stimulate environmental policies such as regulations, standardization, monitoring and control of the industrial environment;

(k) Promote ESID through environmental education and the participation by the general public and non-governmental organizations, such as industrial federations, employees associations, community-based groups, consumers, women's, environmental and developmental organizations;

(l) Support exchanges of information and experience on ESID among all countries in particular between industrialized and developing countries;

(m) Provide access, on preferential conditions, to financing sources to small- and medium-scale enterprises in support of ESID-oriented restructuring and modernization;

(n) Incorporate the principal elements of their policy in programmes that extend over several years. These programmes should be made public.

D. INTERNATIONAL COOPERATION IN ACHIEVING ESID

34. The Ministers called upon Governments to enhance international cooperation in mobilizing financial resources for achieving ESID. The mobilization of financial resources is of vital importance to ESID, as well as to alleviating environmental problems in general. International sources of financing, particularly the development assistance programmes of developed countries, play a key role in this respect.

35. Noting that the transfer of techniques and technologies is one of the keys to the adaptation and absorption of pollution prevention techniques and the cleaner production processes by industrial firms, the Ministers agreed to encourage international cooperation in the transfer of those techniques, technologies and processes, and the requisite information, skills and know-how from industrialized to other countries, in particular developing countries, as well as the means necessary to develop infrastructure and policies to support them. The Ministers recalled United Nations General Assembly resolution 44/228, section I, paragraph 15 (m), which decided that UNCED should have as an objective the examining of effective modalities for favourable access to, and transfer of, environmentally sound technologies, in particular to the developing countries, including on concessional and preferential terms. The Ministers look forward to the results of that examination.

36. The Ministers invited Governments to seek international cooperation in addressing concerns about linkages between the environment and trade in manufactured goods. While the pursuit of the objectives of trade liberalization and environmental protection are in principle compatible, some trade practices may give rise to certain environmental concerns, and some environmental actions may adversely affect international trade flows. The Ministers also noted that improved access to markets in general - through reduction and possible elimination of tariffs and elimination of non-tariff barriers to trade - would improve the possibilities of all countries, particularly of developing countries, to finance the introduction of ESID-related technologies, and could have important foreign exchange implications.

37. Noting that financial and technological constraints are among the key obstacles facing many countries, in particular developing countries, in achieving ESID, the Ministers acknowledged that the industrialized countries should create a climate conducive to enabling those countries to have access to appropriate ESID techniques and technologies and to financial resources on concessional and non-concessional terms, as appropriate.

38. Ministers called for the need to coordinate efforts between UNIDO and all other United Nations institutions and organizations that deal with environmental issues, in order to be more efficient and effective, and avoid duplication in the pursuit of ESID.

39. Ministers recognized the critical situation prevailing in least developed countries and called for special measures in favour of those countries in support of their ESID policies and programmes.

E. FUTURE ACTIVITIES OF UNIDO

40. Ministers recognized that ESID can both reduce environmental problems and enhance industrial efficiency, and invited the fourth session of the General Conference of UNIDO to express its support for UNIDO to continue working on the best options to achieve ESID, in order to present them as a valuable contribution to be taken into account at the Fourth Preparatory Committee of the United Nations Conference on Environment and Development, which will take place in March 1992, and for submission at the UNCED conference in June 1992.

41. Ministers invited UNIDO to submit proposals incorporating the views expressed at the meeting in Copenhagen, and to make concrete suggestions to harmonize its activities, in the short, medium and long term, with the concept of ESID. These suggestions should be submitted for consideration to the policy-making bodies of the Organization, taking into account the mandates, recommendations and guidelines of UNCED. In order to improve UNIDO's capabilities to implement the conclusions and recommendations of the ESID Conference, the Ministers further call upon Member countries to continue to make resources available for sustainable industrial development through the UNIDO Environment Programme.

42. Action by UNIDO, within available regular budget resources and additional voluntary contributions, if any, could make a significant contribution to the implementation of ESID. Because environmental management often involves complex issues and requires specialized skills, UNIDO would need to work in cooperation with other organs, organizations and programmes of the United Nations system to ensure the broadest possible effort. In particular, UNIDO should work closely with the United Nations Environment Programme, especially with its Industry and Environment Office, in such activities as information exchange and training.

43. UNIDO should lend its support, on a coordinated basis, to the activities of other organizations active in this field, in particular United Nations regional commissions, in implementing ESID at the regional level. Further, UNIDO should promote the establishment and support of the necessary institutional framework and should work in close cooperation with national institutions in implementing ESID.

44. The following were some major directions for possible UNIDO action in achieving ESID:

(a) Assisting developing countries, upon request, in building the technical and scientific institutional capacity to develop, absorb and diffuse pollution prevention techniques and cleaner production processes essential to making the transition to ESID. This could be done by:

(i) Demonstrating the financial and economic advantages and environmental benefits of ESID by working cooperatively with industry and other technical experts, and with Governments, to undertake a programme of site-specific, country case studies;

(ii) Providing technical support for the design, establishment, operation, evaluation and monitoring of pollution prevention techniques and cleaner production processes and technologies;

(iii) Assisting demonstration and training centres at new or existing industrial facilities, and providing support to centres of excellence;

(b) Assisting developing countries in the implementation of international environmental conventions and protocols related to industrial activities by:

(i) Providing technical assistance to those countries to identify and implement the actions needed;

(ii) Helping those countries to locate expertise and funding for projects that contribute to the implementation of those conventions and protocols;

(c) Assisting developing countries in determining the environmental soundness of industrial technologies by:

(i) Preparing guidelines on environmentally sound industrial practice for selected sectors;

(ii) Promoting, in selected sectors, technical procedures to evaluate and to test processes, products and services;

(iii) Providing assistance for the development of assessment techniques for the identification and measurement of environmental impact;

(d) Assisting developing countries in integrating environmental considerations into their industrial strategies and policies by:

(i) Identifying sectoral and subsectoral priorities for environmentally sound industrial activities;

(ii) Specifying the techniques available to rehabilitate existing industries so that they could operate in an ecologically sustainable manner, assessing the costs of such a transition and estimating a time-frame for achieving it;

(e) Assisting developing countries in identifying appropriate, including new, financial resources, where possible on concessional terms, that would enable them to take necessary steps to achieve ESID;

(f) Assisting other countries, upon request, in achieving ESID in accordance with the provisions of the UNIDO Constitution and relevant decisions of the General Conference and Industrial Development Board;

(g) Strengthening its existing database and its capacity to coordinate the dissemination of technical and policy information on ESID, inter alia, by cooperating with the United Nations Environment Programme in its work on the International Cleaner Production Clearinghouse (ICPIC).

In implementing its programmes and projects UNIDO should establish and/or strengthen internal procedures for appraisal and approval of activities that ensure compatibility with the concept of ESID.

Agenda item 6: Reports from the symposiums

45. Drawing on the case studies referred to in paragraph 32 above, the Ministers took note with appreciation of the conclusions formulated during a series of technical symposiums that were held concurrently with the plenary meetings of the Conference. Those conclusions are listed below. The technical symposiums covered five industrial subsectors - alumina, leather, phosphate fertilizers, plastics and plastics waste recycling, and pulp and paper. Discussion in the symposiums reflected the issue of ecologically sustainable industrial development addressed in the plenary. Specific examples were provided of the implications of ESID for each subsector.

46. Each symposium was led by a panel consisting of a UNIDO sectoral expert, an independent international expert and a representative of industry. An NGO representative participated in the panels of the five symposiums. The moderator of each panel was a representative of an IGO. After the initial presentations, detailed discussions took place on the specific problems, and their possible solutions, in addressing the tenets of ESID.

47. The five symposiums arrived at various conclusions relevant to the sectors covered. One such conclusion pertained to the need for subsector-specific technical cooperation efforts, the exchange of information and, in some cases, support of significant research efforts, in order

to assist those subsectors in developing countries to meet ESID requirements. A second conclusion was that ESID could be supported by both short-term, low-cost adjustments as well as by longer-term, higher-cost solutions offered by newer technologies. A third conclusion was that meeting ESID requirements would neccessitate some structural changes affecting the subsector as a whole, as well as measures to reduce specific pollutants from individual industrial plants. Examples of such structural changes were: recycling in the pulp and paper, plastics and aluminium industries; provision of alternative processes to the leather tanning industry; and changes in agricultural practices to reduce the need for fertilizers. A fourth conclusion was that industry bears a major responsibility for the cradle-to-grave management of its products, including support for the above-mentioned structural changes.

48. It was agreed by participants that the exchange of views in the individual symposiums, in addition to clarifying the issues relating to ecologically sustainable industrial development for the specific subsectors, had suggested important roles for different actors. The discussion also highlighted a number of ways in which UNIDO, based on its accumulated experience, could support such efforts at both the policy, informational and operational levels.

49. More detailed coverage of the results of the symposiums is contained in annex I to the present report.

Agenda item 7: Adoption of the report

50. The report of the Conference was presented by the Vice-President, Mr. M. Malianga (Zimbabwe) on behalf of the Rapporteur, and was adopted at the final plenary session with the understanding that the Secretariat was authorized to finalize it in the light of amendments.

Agenda item 8: Closure of the Conference

51. The Ministers expressed their appreciation to the Government of Denmark for its hospitality and cooperation in facilitating the work of the Conference. In this connection, the Ministers noted with appreciation the contributions by those countries who, through the Industrial Development Fund, made it possible to convene the Conference.

52. Statements of appreciation were made by the representatives of Argentina, India, Mexico, Turkey, Uganda, United Republic of Tanzania, United States of America and by the representative of Vor Falles Fremtid, on behalf of the NGOs attending the Conference.

53. The meeting was closed at 12 noon, 18 October 1991.

Annex I

REPORTS OF TECHNICAL SYMPOSIUMS

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I. ALUMINA INDUSTRY

1. The Symposium was held on 15 October 1991. Members of the Panel were P. Siklosi (Consultant), F. Halkau (Moderator) UNEP/IEO, T. Grof (Rapporteur) UNIDO, F. Panzeri (Industry representative) Italy, and R. Luken, UNIDO Secretariat. Ms. Taschner from the European Environmental Bureau made an intervention from the floor on behalf of NGOs.

2. Mr. Siklosi briefly summarized the case study and highlighted the main environmental issues now confronting the alumina industry. These include pollution, waste disposal, energy, occupational health and safety.

A. Introduction

3. Bauxite mining causes unavoidable ecological disturbance, and in some circumstances the issue of preservation of biodiversity is important.

4. Industry has numerous options for addressing environmental issues. Many of these are based on reducing in-plant losses and are achieved by a general improvement in operating efficiency, thus achieving both economic and environmental goals simultaneously. Some measures, however, especially those concerning mine rehabilitation and waste disposal, will entail an additional non-recoverable cost. Total costing procedures and harmonization of environmental requirements are needed to encourage the uniform application of all environmental measures.

5. Traditional environmental issues of pollution and waste disposal are generally well appreciated by the industry. Consciousness of energy consumption as a major issue confronting the sector is also rising, and many initiatives are being undertaken to reduce energy consumption.

6. A number of specific technical questions were raised during discussion about such issues as caustic soda recovery, construction of red mud disposal basins, and use of red mud as a soil conditioner or even as artificial soil.

B. Recommendations

7. Industry experts summarized the most promising ways of reducing the negative environmental impact of the alumina industry at the plant level as follows:

(a) Reduction of the amount of natural resources (primarily energy) consumed per unit amount of alumina manufactured;

(b) Reduction of the residual discharges (effluents, dust, stack gases) per unit amount of alumina manufactured;

(c) Environmentally sustainable discharge and storage of digestion residue (dry stacking of red mud), recultivation of the filled-up storage areas.

8. The above can be realized by:

(a) Better operational and maintenance practices (e.g. preventing leakages, proper heat insulation, maintaining the prescribed parameters of the process, etc.);

(b) Economically reasonable measures for efficient resource utilization, pollution control and waste disposal (e.g. increasing the number and size of heat exchangers, washing stages, etc.);

(c) Measures necessary to meet environmental requirements conforming with the generic ESID norms (e.g. installing dust collectors, scrubbers, dust filters, red mud filters or deep thickeners, recultivating mined-out areas and filled-up mud disposal areas, etc.) even if costly.

9. In general, it can be said that whereas modifications to existing old plants are relatively costly (they may reach even 30 to 50 per cent of the original investment costs), those incorporated in the engineering designs of a new plant (or of a significant expansion of an existing one) do not increase the capital costs by more than 5 to 10 per cent. At the same time the latter usually enable such savings to be made (both in related investment and operating costs) that they can make the application of environmentally sustainable solutions profitable.

10. As a general rule, it was agreed that sound methods of operation and of waste disposal do exist, but that they are not always applied due to lack of information, expertise or capital.

C. Discussion

11. During discussion, delegates raised the importance of broader issues which affect the industry as a whole. These broader issues include:

(a) Promotion of recycling as a means of reducing energy and resource demand, both of which have unavoidable environmental impact;

(b) Application of total life-cycle considerations within the industry so as to minimize overall environmental impact, and to avoid shifting environmental impact between different sectors;

(c) Possibility of increased residue and waste utilization outside the plant so as to reduce the need for disposal. There are already many useful re-use options; nevertheless, further R and D and demonstration projects should be encouraged so as to expand further these options. The practical application of re-use will always be strongly dependent on local and regional

circumstances, and also requires study in each case. Despite increased waste re-use in the immediate future, alumina plants will still need to rely heavily on well-engineered waste disposal methods;

(d) A closer harmonization of environmental standards and procedures around the world is desirable so as to reduce trade distortion. Project costing methodologies should include an estimate of environmental damage so as to achieve a total cost concept of alumina production;

(e) Corporate responsibility for environmental performance should be strengthened. Companies need to take a long-term view of environmental performance as well as paying attention to immediate impacts;

(f) Increased consideration needs to be given to interlinkages within the sector - vertical linkages within the aluminium industry as a whole so as to apply total-environment and life-cycle concepts, and horizontal linkages so as to maximize the contribution to environmental performance from suppliers and from waste re-use activities.

12. A general view from the discussion was that increased emphasis on information collection and dissemination concerning methods of reducing environmental impact would help many enterprises, especially those which are not linked with large vertically integrated companies.

II. LEATHER INDUSTRY

1. The Symposium on the leather industry was held on 15 October 1991. Members of the Panel were R. Higham (Consultant), Ms. G. Stoikov, International Labour Office (Moderator), J. Buljan, UNIDO (Rapporteur), R. L. Sykes, United Kingdom (Industry representative), A. Jernelov, Sweden (NGO) and R. Williams, UNIDO Secretariat.

2. Mr. Higham briefly summarized the case study and highlighted the main environmental issues.

A. Discussion

3. Technology: It was agreed that R and D had made great progress and that well-proven cleaner production methods are available. However, there still remains a number of barriers such as dissemination of information about cleaner technologies which are not always easily available to the tanning industry.

4. There is also the problem of transferring technology from the R and D laboratory into practical everyday use, especially in small- and medium-scale tanneries. Low-waste technologies very often require better skilled personnel at all levels and closer technical supervision than conventional processing. This is, in many instances, a crucial constraint. In a number of developing countries there is a lack of know-how in the design, installation, and efficient operation of effluent treatment plants.

5. Owing to the nature of leather production, even in the most sophisticated tannery, technology remains to a certain extent a mixture of craft and science. Nevertheless, unnecessary conservatism remains in some instances a significant barrier.

6. Financial aspects: The issue of cost and financing was discussed and there was a general consensus that cost constituted an obstacle to the implementation of clean and safe production of leather. Within this context the cost of specialty chemicals needed to replace conventional substances and the cost of process and water consumption control equipment were specifically mentioned.

7. In general, the cost of ecologically sound equipment is even more prohibitive in developing countries than in developed countries because of high capital costs and very often high import duties. In addition, there is the cost of hiring and training the personnel needed for the operation of new equipment and processes.

8. Sharing of responsibilities: There was a lively debate on how to share the responsibilities for preventing pollution and cleaning up. A special issue raised was the role of Governments, industries, R and D institutions, monitoring/enforcement organizations, and consumers.

B. Recommendations

9. Delegates and industry experts summarized the most promising ways of reducing the negative environmental impact of the leather industry. It was agreed that the overriding principle is that prevention is better than cure, and that pollution prevention and waste management systems should be integrated at all levels. The following recommendations were made:

(a) Government and industry should cooperate in order to:

(i) Develop fair and implementable environmental legislation;

(ii) Promote cleaner and cost-efficient technologies at all stages of leather production and waste management (this could possibly include the relocation of tanneries, where appropriate);

(iii) Devise innovative fiscal and other incentives to encourage tanneries to use cleaner production and waste management methods;

(iv) Develop and/or strengthen R and D facilities to satisfy the specific needs of the local industry, and where possible, also install pilot and demonstration plants and laboratories;

(v) Launch environmental awareness and public education campaigns and provide the necessary training for executives, supervisors and operators;

(vi) Increase the use of environmental audits;

(vii) Provide the necessary infrastructural support (utilities, land, sewage, landfills for disposal of solid wastes, etc.).

(b) At the plant level the following measures requiring limited investment could lead to significant reduction of pollution loads:

(i) Strict process control;

(ii) Good housekeeping;

(iii) Recovery and/or recycling of chemicals;

(iv) Proper maintenance and repair of equipment;

(v) Introduction of sound management concepts.

Further measures to reduce the pollution load could include the utilization of waste of commercial value for the production of glue, gelatine, fertilizers, animal feeds, etc. However such operations are very often profitable only in large tanneries. The need for technical cooperation in setting up joint effluent treatment plants for groups of tanneries and isolated individual tanneries was also expressed. To ensure a healthy working environment for the benefit of all staff is the special responsibility of tannery management.

(c) International and relevant national agencies should:

(i) Facilitate the advancement of networking of global capabilities and programmes in the R and D institutions and provide access to relevant information at the national and international level;

(ii) Ensure the transfer of cleaner technologies and low-cost waste treatment systems by means of databases, audio-visual training packages, workshops, seminars, symposia, etc.;

(iii) Make available attractive financial terms (soft loans) and support from international institutions. This would overcome the disincentive to change caused by high initial investment. Such support should also be in the form of demonstration projects illustrating tannery partial and full automation, and include development of human resources;

(iv) Organize a special conference on low waste technologies for the leather industry in developing countries.

III. PHOSPHATE FERTILIZERS

1. The Symposium on phosphate fertilizers was held on 17 October 1991. Members of the Panel were J. Schultz (Consultant), R. N. Roy, Food and Agriculture Organization (Moderator), I. Volodin, UNIDO (Rapporteur), O. Lie, Norsk Hydro (Industry Representative), M. Handley, International Fertilizer Association Technical Committee (Industry Representative), J. H. Oxley and S. Luken, UNIDO Secretariat.

2. Mr. Schultz briefly summarized the case study and highlighted the main environmental issues.

A. Introduction

3. The importance of mineral fertilizers for agriculture cannot be underestimated. Fertilizer is one of the major inputs that enables adequate food production and maintenance of soil fertility on a sustainable basis.

4. There is no doubt that, without fertilizers, sustainable agriculture required to feed the world's growing population cannot occur and the most critical issue is not to stop fertilizer production, but to try to find ways and means, at the level of industry, to maintain ecologically friendly and sustainable production. In other words, how to achieve ESID in this subsector.

5. It is crucially important to identify the criteria for ecological sustainability in industry and agriculture. This has turned out to be a very challenging task. Every attempt brings out a number of issues that need to be addressed. In many respects, the scientific, financial, and political community has not been fully challenged to address the question of quantifying the complex relationships of these issues.

6. These issues are:

(a) The transfer and execution of ESID technology;

(b) The coupling of agronomic needs with more environmentally benign phosphate production technology;

(c) The seeking of financial resources to implement ESID;

(d) The restrictive fertilizer product legislation that inhibits implementation of ESID;

(e) The heavy metal content associated with the phosphate sector, especially cadmium;

(f) The management of process wastes and by-products associated with the phosphoric acid-based products;

(g) The improved agronomic efficiency to help mitigate the impact of the increased cost of ESID.

7. The Panel discussion identified the major barriers and proposed some initiatives for achieving ESID in the fertilizer industry.

8. A summary of these barriers, with no reference to priority or importance, follows:

(a) Lack of definition of acceptable minimum global environmental standards;

(b) Cost required to implement available and emerging ESID technology;

(c) Major investments required to change product mix (product types and solubility);

(d) Limited availability of foreign exchange;

(e) Marginal competitive status within the phosphate fertilizer industry;

(f) Lack of significant farm level cost differences between conventional and more environmentally benign products;

(g) Restrictive fertilizer product legislation;

(h) Difficulty in changing farmers' practices.

B. Recommendations

9. The following recommendations emerged from the work of the symposium.

(a) Encourage the international community to convene an international working panel of experts from industry, national and international regulatory bodies, and the scientific community to draft

proposed minimum environmental compliance standards for the phosphate fertilizer production sector appropriate to country location, taking into consideration scientific data, costs, available capital, and national development priorities. Similar initiatives should be taken in regard to phosphate fertilizer use;

(b) Initiate a critical scientific look at issues related to cadmium, fluorine and other potentially hazardous substances occurring in the production and use cycle of phosphate fertilizers taking into consideration other contributive sources;

(c) Communicate industry and process-specific engineering and operational technology to producers in developing countries that is designed to achieve ESID, through optimization and retrofitting of existing facilities at low cost as opposed to total replacement of facilities at high capital cost;

(d) Develop an implementation timetable on a national basis for attaining ESID consistent with the availability of capital and the operation of the industry in a competitive, yet sufficiently profitable manner;

(e) Provide assistance in securing the necessary capital for cost-effective implementation of identified ESID initiatives;

(f) Encourage the industrial community to intensify its commitment to R and D designed to expedite technology development and technology transfer leading to ESID;

(g) Improve phosphate fertilizer use efficiency at the farm level to help offset the increased cost of phosphate fertilizers that is likely to be attributed to ESID;

(h) Promote national fertili egislation relative to product types and characteristics that is consistent with achieving the appropriate agronomic performance, while not unduly restricting raw material and manufacturing choices that may facilitate more rapid adoption of ESID;

(i) Encourage national policy initiatives relative to fertilizer pricing and distribution that promotes the local production of more environmentally benign fertilizer products based on domestic resources, provided these alternative products are competitive in real terms with imported products that are produced in world-scale production units.

C. Discussion

10. As a result of the presentation by the Panelists and the summary drawn up by the Moderator, a consensus was evident with regard to the technical content of the case study. The delegates, however, focused their attention on a number of specific issues with particular reference to the following:

(a) There is no substitute for phosphate, any reduction of its use would result in the reduced production of food, fibre and edible oils;

(b) Concern was expressed regarding the lack of representation of bodies concerned with public opinion on environmental issues;

(c) Cadmium and other heavy metals were identified as a major concern affecting the production, trade and use of phosphate raw materials and products. The concern is related to their impact on human and animal health through the food chain;

(d) Fluorine contained in phosphate fertilizer raw materials and products was identified as a potential contaminant of surface and groundwater;

(e) Concern was voiced that less beneficiated (pure) phosphate products considered more environmentally benign may actually contribute to increased levels of undesirable metals in the finished phosphate products;

(f) Concern was raised that reclamation at mined-out lands may be excessively costly in certain mining scenarios;

(g) An issue was raised relative to the feasibility of incorporating phosphogypsum disposal with the reclamation at mined-out areas;

(h) A number of delegates indicated that relatively extensive research is already under way for finding cost-effective methods for removing cadmium, fluorine and other potentially hazardous elements from phosphate materials;

(i) Concern was expressed about the need for immediate assistance in technology transfer to developing countries to achieve ESID. To this effect, it was suggested that a special fund should be created;

(j) Concern was expressed with regard to the disposal of fluosilicic acid recovered from phosphate processing in those locations where markets for this by-product material do not exist;

(k) It was mentioned that bentonite when added to sandy soils improves moisture-holding capacity and fertilizer use efficiency. Immobilization of cadmium was also suggested due to the betonite;

(l) Concern was voiced with regard to the problems that would be caused by unilateral environmental legislative initiatives;

(m) There was significant support for the concept of using less soluble phosphate fertilizers provided they are effective;

(n) Concern was expressed about the very high level of SOx pollution from a few plants in developing countries representing a very high proportion of industry's worldwide SOx pollution in addition to being a serious regional source of pollution.

IV. PLASTICS AND PLASTICS WASTE RECYCLING

A. Introduction

1. The Symposium was to be held on 17 October 1991, but by request of the Italian delegation a preliminary gathering was held on 15 October 1991. Members of the Panel were Prof. A. Buekens (Consultant), A. Sieber, Economic Commission for Europe (Moderator), Ms. A. Tcheknavorian-Asenbauer (Director, IO/T, UNIDO), J. H. Oxley (Rapporteur) UNIDO, and D. Rehling (European Environmental Bureau) and R. Williams, UNIDO Secretariat.

2. The case study was summarized by Prof. Buekens who pointed out various technical and economic

challenges to be met. Plastics belong to various mutually incompatible generic groups. Each variety is manufactured in numerous grades with different molecular weight and structure. Moreover, plastics are transformed only after admixture of a host of different additives. A first challenge is hence identification of a particular grade that can be recycled as a more or less homogeneous function.

3. During processing and later use the resin undergoes ageing, as a consequence of thermal degradation, oxidation, cross-linking, loss of additives, etc. Plastics also take up impurities, such as traces of materials e.g. moisture and printing inks.

4. A survey was given of various methods of materials recycling, including those after chemical reprocessing (pyrolysis, hydrolysis) and energetic usage.

5. Technically speaking, many problems have been solved. The logistics of collection and transportation, the required grading, shredding, cleaning, regranulation and marketing greatly add to the cost of secondary plastics, whereas their quality goes down.

B. Recommendations

6. It is suggested that Governments:

(a) Take the initiative to foster the development by industry of appropriate and internationally standardized means of identifying the type of plastic used in a product (e.g. by adding trace amounts of fluorescent additives);

(b) Encourage the production and use of utilitarian products (e.g. park benches, acoustic walls, fences) which can be made from recycled plastics out of mixed consumer waste;

(c) Should ban uncontrolled, unhygienic forms of scavenging in developing countries and encourage systematic collection at the source (e.g. households).

7. It is suggested that industry:

(a) Should, as far as possible, avoid using more than one type of plastic for a given article;

(b) Should develop products which can be made from recycled plastics composed of two or more commingled types;

(c) Should develop the production of plastic goods which are easily recycled;

(d) Should assume responsibility for the products it takes to the market with inclusion of all environmental and safety aspects.

8. It is suggested that international organizations, such as UNIDO:

(a) Should be encouraged to continue providing technical assistance aimed at improving the efficiency of plastics transformation industries in developing countries, so as to improve the performance and life of plastic articles, thus avoiding waste;

(b) Should promote the creation of small industries in developing countries to make maximum use of secondary raw materials, in particular plastics contained in the waste stream.

C. Discussion

9. In the case study and the following discussion considerable attention was given to the huge technical and economic barriers to be overcome:

(a) The great variety of plastic resins, grades and additives in use defies precise identification and sorting;

(b) The decrease in mechanical properties as a consequence of ageing, thermal degradation during reprocessing, photochemical degradation, oxidation, cross-linking, loss or consumption of stabilizing additives and antioxidants, etc;

(c) The uptake of contaminants, such as traces of packed materials, moisture, inks, solvents, etc;

(d) The lightness and widespread use of post-consumer waste makes it a challenge to retrieve sizeable amounts of waste plastics at a reasonable cost;

(e) The variable and ill-defined specifications of reclaimed plastics.

10. The cost of collection, identification, sorting and grading, shredding, cleaning, regranulation, processing and marketing was noted to be higher than for virgin plastics, taking into account the decreased productivity obtainable with reclaimed plastics as a consequence of their variable melt and flow behaviour. During the discussion the necessity of marking plastics was stressed. The need for industry to use technical and business ingenuity in developing the plastics production transformation and recycling industries, as well as in the packaging industry, so as to minimize unrecyclable waste was also mentioned.

11. Attention was paid to:

(a) Governmental measures to encourage or even to enforce recycling quotas;

(b) The economic incentives to promote recycling activities despite large fluctuations in the cost of virgin materials;

(c) The viewpoints of collecting and recycling firms;

(d) The growing sense of responsibility in some branches of industry (car manufacturers) in order to favour recycling of spare parts or plastic materials.

V. PULP AND PAPER

A. Introduction

1. The Symposium on pulp and paper was held on 14 October 1991. Members of the Panel were J. Fellegi (Consultant), May Htun, UNCED (Moderator), R. V. Assumpcao, UNIDO (Rapporteur), Prof. N. Hartler, Royal Institute of Technology, Sweden (Industry representative), Margaret Rainey, Greenpeace International, and R. Williams, UNIDO Secretariat.

2. Mr. Fellegi briefly summarized the case study and emphasized the main differences between developed and developing countries with regard to fibrous raw materials used for pulping, economic conditions, and the level of technology. He also reviewed the impact of these differences on the

environmental situation and barriers on the road to an ecologically sustainable development in this industry. The UNIDO representative outlined that Organization's activities aimed at improving the environmental situation and proposals for future activities.

3. Industry experts reached the following conclusions based on the case study:

(a) Sustainability must be judged in a broad sense considering the product "from cradle-to-grave";

(b) Wood is a dominating raw material and in the large producing countries it is managed on a sustained basis;

(c) Large-scale modern pulp and paper manufacturing has been greatly improved, resulting in a potential for producing pulp and paper with minimal environmental disturbance. In developed countries, very large investments have already been made in the industry and more are planned. In mills that are small and old and use non-wood fibres, there is significant scope for improving the environmental situation;

(d) The subject of whether to totally exclude molecular chlorine and possibly chlorine dioxide in pulp bleaching is still open;

(e) Emission to air of acidifying gases can be greatly reduced by modern technology;

(f) In the case of chemical pulping it is possible to produce all energy required internally and also to produce some surplus with low emissions of acidifying gases;

(g) The product "paper" is environmentally friendly. It is produced from renewable raw materials and is biologically degradable. By applying new technologies it is possible to produce bleached products with dioxin content at the same level as for unbleached pulp;

(h) There is today a considerable move to expand use of recycled paper in traditional fields. All fibres cannot be recycled for reasons of fibre quality as well as hygiene. The non-recycled part of waste paper should be used for energy production, with no disturbance of the global carbon dioxide balance.

B. Recommendations

4. To overcome barriers, Governments are requested:

(a) To introduce environmental standards, if not yet established;

(b) To enforce such standards and to support the introduction of clean technology by tax incentives;

(c) To reduce or to abolish existing import duty on waste paper and equipment for clean technologies;

(d) To introduce charges for pollution and use the collected funds for subsidizing clean production technologies in the pulp and paper industry.

5. Industry is advised:

(a) To improve management, housekeeping and engineering, by reducing the environmental impact of production, especially by accidental discharges;

(b) To reduce water and energy consumption in pulp and paper making;

(c) To introduce internal environmental monitoring and auditing;

(d) To consider reduction of chlorine in the bleaching process;

(e) To cooperate with national and international organizations in developing indigenous clean technologies or by adapting foreign know-how to local conditions;

(f) To consider, in developing countries, the possibility of grouping small pulp mills to recover the chemicals from black liquor;

(g) To improve, at all levels, management and technical skills in the mills in cooperation with the Government and international organizations.

6. International organizations are requested:

(a) To intensify the flow of information on clean technologies between countries;

(b) To promote research and development of technologies for pulping, small-scale chemical recovery and bleaching with regard to non-wood materials such as:

(i) Sodium-oxygen, potassium hydroxide, soda antraquinone, organosolv pulping;

(ii) Chlorine-free bleaching using oxygen, oxone, hydrogen peroxide as well as biobleaching;

(iii) Alternative processes for small-scale chemical recovery and utilization of black liquor;

(c) To disseminate know-how gained under UNDP/UNIDO projects regarding treatment of black liquor and effluents;

(d) To provide assistance to institutions in developing countries to develop indigenous technologies for clean production and further the cooperation between industry and such institutions world wide.

7. The representative of Greenpeace International presented a statement with the following recommendations:

(a) In order to achieve ESID, the discharges of organochlorine compounds should be phased out through the use of clean production methods, i.e. phase out all chlorine-based bleaching;

(b) To increase recycling of waste paper by at least 5 per cent per year to achieve a global recycling rate of 50 per cent by the year 1995;

(c) To prohibit all forestry practices that cause biodiversity reduction. Pulp producers should install a biodiversity monitoring programme in all forests where wood is extracted.

C. Discussion

8. It was stressed that the most important barrier to introducing ESID in developing countries is finance. There are still technical and economic barriers to achieving ESID when using non-wood raw materials, especially in small mills. Another barrier is lack of technical skills and education.

9. Other considerations were:

(a) Good housekeeping and engineering practices, e.g. avoiding accidental discharges of polluting substances, good management of wastes, optimizing raw material utilization and life-cycle approach (cradle-grave) are significant steps in achieving clean production;

(b) Emerging trends in pulping, washing of pulp, chemical recovery and bleaching, e.g. use of potassium hydroxide instead of sodium hydroxide, simplified chemical recovery, etc;

(c) Waste paper should be recycled and new environment friendly printing inks should be used;

(d) The problem of completely chlorine-free bleaching was discussed and mention was made that production of high brightness pulp without chlorine compounds is at the present time not realistic. However, lower whiteness paper can be produced by using pulps bleached with a low chlorine charge or without chlorine, if acceptable to consumers.

10. It was suggested to complement the case study by adding current statistics on pulp production and processes giving details of developed and developing countries.

Annex II

DOCUMENTS SUBMITTED TO THE CONFERENCE

Document symbol	Title of Document
ID/WG.516/12	Provisional Agenda
ID/WG.516/12/Add.1	Annotated Provisional Agenda
ID/WG.516/11	Draft Rules of Procedure for the Conference on Ecologically Sustainable Industrial Development (ESID)
ID/WG.516/2	Issues in Support of Ecologically Sustainable Industrial Development
ID/WG.516/9	Draft Conclusions and Recommendations
	Working Papers
ID/WG.516/7	The Road to Ecologically Sustainable Industrial Development. Working Paper 1
ID/WG.516/1	Barriers Facing the Achievement of Ecologically Sustainable Industrial Development. Working Paper 2
ID/WG.516/6	Industry Initiatives in Achieving Ecologically Sustainable Industrial Development. Working Paper 3
ID/WG.516/5	Government Initiatives in Achieving Ecologically Sustainable Industrial Development. Working Paper 4
ID/WG.516/3	International Cooperation in Achieving Ecologically Sustainable Industrial Development. Working Paper 5
	Case Studies
ID/WG.516/4	Pulp and Paper. Case Study No. 1
ID/WG.516/4/Summary	Pulp and Paper. Case Study No. 1 - Executive Summary
ID/WG.516/8	Alumina Industry. Case Study No. 2
ID/WG.516/8/Summary	Alumina Industry. Case Study No. 2 - Executive Summary
ID/WG.516/10	Leather Industry. Case Study No. 3
ID/WG.516/10/Summary	Leather Industry. Case Study No. 3 - Executive Summary
ID/WG.516/14	Phosphate Fertilizers. Case Study No. 4
ID/WG.516/14/Summary	Phosphate Fertilizers. Case Study No. 4 - Executive Summary
ID/WG.516/15	Plastics and Plastics Waste Recycling. Case Study No. 5
ID/WG.516/15/Summary	Plastics and Plastics Waste Recycling. Case Study No. 5 - Executive Summary
	Information documents
ID/WG.516/13	Report of the Meeting of Senior Governmental Experts for the Preparation of the Conference on Ecologically Sustainable Industrial Development
ID/WG.516/16	List of Documents
ID/WG.516/INF.1	Advance Information for Participants